STEEL LIVES: AN ETHNOGRAPHY OF LABOUR IN CONTEMPORARY SHEFFIELD

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ABSTRACT

My doctoral research focuses on the experience of labour in a deprived area of Sheffield, UK, where I lived and worked in two steel factories for eighteen months. In my thesis, I study the factory as a physical, economic and political space located between society and the state, and explore how state neo-liberal policies and globalisation affect working class productive and reproductive strategies, and narratives of labour; and reshape the spaces of the factory, the family and the neighbourhood. In the first part of the thesis I reconstruct the history of steel labour on the shopfloor and in the neighbourhood. In Chapter 1, I show that industrial capitalism fragmented the workforce into 'artisans' – skilled casual labourers – and 'proletarians' – unskilled wage workers. In Chapter 2, I show how this fragmentation was reproduced in the neighbourhood by public social and economic policies and by the 'medical discourse' centred on the health of working classes. The two shopfloor ethnographies in Chapter 3 and 4, show that the historical fragmentation between 'artisans' and 'proletarians' is reproduced in the capitalist labour processes today. The neighbourhood ethnographies in Chapter 5 and 6 challenge the hypothesis of 'late capitalism' scholars of the social fragmentation of the artisan-labourers and of the social stability of the families of the aristocracy of labour, and show the relative economic and social stability of the former and the fragility of the productive and reproductive institutions of the latter. I the conclusion I claim that 'late capitalism' does not entail the dissolution of the working class and the consolidation of an aristocracy of labour under the impulse of technological innovation and capital intensification. Rather, it increases both the fragmentation, and the close interaction, between the spaces of wage labour, nuclear families and civil society and the spaces of casual labour, extended families and local politics.

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INTRODUCTION

This thesis focuses on the experience of labour in modern factory production in Sheffield, in the contexts of de-industrialisation and of state welfare and economic policies linked to the objective of local regeneration. It analyses the way in which the workers in two Sheffield steel factories conceptualise, understand and value their work, and it highlights the subjective and material determinants of their attitudes towards work. I myself worked in these two factories and lived nearby for eighteen months, and my study combines shopfloor and neighbourhood ethnographies to ground the analysis of economic processes in their broader social and political contexts.

UNSOR is a middle-sized firm with a totally integrated production process, a bureaucratic organisational structure and a unionised and specialised workforce. The factory is located in an ex-mining village between Nottingham and Sheffield. Since the young population left due to the closure of the local mines, the village is now populated by industrial workers commuting to Sheffield and Rotherham and scattered with a dozen shops and a miners' workingmen's club. The workers of UNSOR are primarily ex-miners or labourers from other industries who commute from Sheffield or from neighbouring villages. Most of their families have a history of employment in the steel and mining industry and of mobility between these two sectors.

Morris, the second firm in which I worked, is by contrast a small machine shop producing tools with 19th century machines, an un-unionised workforce and virtually no authority structure on the shopfloor. The forgers of Morris – who call themselves 'hot' workers – have a long family history of skilled trades and of residential stability in the Attercliffe area of Sheffield. The 'cold' workers, younger and less skilled than these 'hot workers', live in working class suburbs outside the city and have an occupational background of unskilled labour and a history of residential migrations between Sheffield and Rotherham, where the heavy industry developed at the end of the 19th century.

Attercliffe is an area with a long history of early industrialisation, nationalisations, mergers and privatisations in the steel industry. In Attercliffe, the aristocracy controlled the cutlers' trade in the 18th century, the industrial bourgeoisie developed integrated

factories along the river Don in the 19th century and thousands of steelworkers lived and worked there in the years of reconstruction after the Second World War, when the steel industry was first nationalised. The industrial decline that followed the massive restructuring of the steel industry in the 1980s is said have emptied Attercliffe of its workers and factories, and transformed the 'steel city' into an 'area of urban deprivation', dominated by unemployment, crime, drugs and prostitution. In spite of this official picture, Attercliffe is still full of pubs, B&Bs, shops, small firms and workingmen's clubs, and its busy economic and social life often overlaps with the working activities at Morris.

My work is an anthropological study of economic organisations and contributes to the anthropological tradition[1] that stresses the cultural specificity of economic processes. In fact, the evidence of my fieldwork – the closure of UNSOR in spite of its 'efficiency' and 'advanced technology' and the resilience of Morris, an 'uneconomic' and 'technologically obsolete' machine shop – provides empirical ground for an anthropological critique of such 'economic' concepts as 'profit', 'efficiency', 'rationality' and 'technological development'. I graduated in Economics and worked as a business consultant in Italy before turning to anthropology, and my work aims to re-think critically some economic concepts as they are taught in economics faculties and taken for granted by the business community.

My work also contributes to the tradition of industrial sociology[2] that developed from Marx's seminal study of the capitalist labour process (1976) [1857]. This tradition has varyingly re-elaborated Marx' claim that the capitalist labour process relies on the existence of a class of persons that own and control the means of production and a class of persons who have no other commodity to sell than their own capacity to work. I expand these contributions in two anthropologically informed directions. First, I emphasise the cultural specificity of subjective experiences of labour[3]. Second, I combine shopfloor and neighbourhood ethnography to include the state and the family among the determinants of working class consciousness.

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[1] Bloch and Parry (1989); Gudeman (1986; 2001).
[2] Beynon (1973); Braverman (1974); Burawoy (1979; 1985); Hyman (1975); Litter (1982); Storey (1985).
[3] For recent anthropological contributions in this direction, see Carrier (1992) and Parry (1999).

The thesis develops six main arguments.

The first relates to the deskilling inherent in the capitalist labour process, as highlighted by H. Braverman in his *'Labour and Monopoly Capitalism'* (1974). In his detailed historical account of the transformation of the capitalist labour process, Braverman saw the principles embodied in Scientific Management as the pervasive basis for the organisation and control of work in the twentieth century. For Braverman, as for Marx, the capitalist labour process is 'incessantly transformed under the impetus of the accumulation of capital' (ibid: 8) and characterised by the purchase and sale of labour power. Due to the fact that 'what the worker sells and what the capitalist buys is not an agreed amount of labour, but the power to labour over an agreed period of time' (ibid: 54), it 'becomes essential for the capitalist that control over the labour process pass from the hands of the worker into his own' (ibid: 58). This historical development alienates the worker from the process of production and 'presents itself to the capitalist as a problem of *management* '(ibid: 58). Unlike other studies of industrial sociology that considered Scientific Management as a set of ideas or 'ideologies'[4], Braverman saw Taylorism as a managerial practice that involves the design, control and organisation of work and impacts on the labour process in three ways. First, it dissociates the labour process from the skills of the workers through the managerial practice of establishing quantitative and impersonal standards of production. Second, it separates conception from execution so that the unity of mental and manual labour in the labour process is broken and the workers perform simplified jobs that have been previously planned by the management. Third, it increases the capitalists' monopoly over the knowledge of the labour process. Braverman historically frames the development of Scientific Management in the context of Monopoly Capitalism and highlights the role of the state in creating markets for mass consumption and in expanding the manufacturing base through legal and welfare policies.

My ethnography modifies Braverman's arguments in two ways. First, in retracing the history of the transformation of the capitalist labour process in the steel industry in Sheffield, I show that an important section of the working class was never fully proletarianised and that, well into the 20th century, the capitalist labour process relied on

[4] Bendix (1956); Rose (1988).

two kinds of labour. This was firstly the labour of the proletarians, that was increasingly deskilled and alienated; and secondly the labour of the skilled artisans, who maintained their ownership of the tools of production, control over the labour process, and who sold their labour and production in local and informal labour markets. Put more simply, I claim that the capitalist labour process did not develop in Sheffield in the pure form described by Marx and Braverman but rather as a mixture of industrial capitalism, petty commodity production and subcontracting where the very distinction between capital and labour was blurred. In my shopfloor ethnography I make this same point with regard to modern factory production. I show that capitalist shopfloors still mix skilled and unskilled labour[5]; artisans and proletarians; workers who own their tools and workers who own only their labour, and workers, like the 'cold' workers of Morris, who see themselves as wage earners and others, like the 'hot' workers in Morris, who see themselves as self-employed. More generally, my historical evidence challenges Braverman's straightforward historical trajectory of the steel industry from subcontracting and a putting-out system to centralised production; and my ethnographic evidence challenges Braverman's argument of the superior exploitative potential of the latter over the former. In fact, my work suggests that the exploitative potential of 'late capitalism' relies on the fact that it reproduces the craftsmanship, task-orientation and team-work of early capitalism *within* the deskilled and alienated labour process of monopoly capitalism.

My second argument relates to M. Burawoy's claim that class consciousness is crafted at the point of production and that workers' relations in production are relatively independent of 'external systems of social relations, involving family, schooling and the community' (1979: 147). In his influential books *Manufacturing Consent* (1979) and *The Politics of Production* (1985), Burawoy pinpoints the lack of any analysis of the subjective content of class in Braverman's *Labour and Monopoly Capitalism*[6] and suggests that capital exploits the workers' subjectivity to its own ends. The workers manufacture their own consent to their exploitation by re-producing the capitalists' rules of production and social relations. In other terms, Burawoy argues that the workers organise and control production through informal games and social rules and that it is

[5] This point is also made by Littler (1982) and Storey (1985).
[6] In the opening of his *Labour and Monopoly Capital* Braverman states that 'This is a book about the working class as a class *in itself* not as a class *for itself*' (ibid: 27).

precisely this workers' informal 'shopfloor culture' that socially and psychologically motivates them to consent to produce for the capitalist and to intensify their production. Burawoy is right to stress how the workers' subjectivity enters into the labour process. Nevertheless, he is wrong in claiming that the workers' culture consists only of rules of production and of social relations constructed in the workplace, rather than being historically crafted in a variety of contexts located outside the factory gates. Besides, Burawoy's insistence on the strict causal relationship between 'factory regimes' – that is, modes of capitalist control – and working class consciousness implies a deterministic view of history, characterised by stages of capitalist control from which homogenous forms of working class consciousness have developed. I challenge these two arguments in my historical chapters and in my shopfloor and neighbourhood ethnographies

Chapter 1 is an historical reconstruction of the development of the technology of production and of the labour organisation of capitalist shopfloors in the Sheffield steel industry from early to late capitalism. It shows the coexistence, within the same factory regime, of two complementary and interdependent working class consciousnesses: the consciousness of the industrial proletariat and the consciousness of the skilled artisans. I suggest that these shopfloors mixed the technology of mass production with the craftsmanship of the skilled artisans; wage labour with self-employment; repetitive and deskilling tasks with autonomous and fulfilling ones; working class notions of 'equality' and 'solidarity' with the individualistic craft consciousness and hierarchic relations of production of the artisans. I conclude the chapter by claiming that today, de-industrialisation and state economic liberalism increases the fragmentation of the working class between these two antagonistic and interdependent subjective meanings of work.

In Chapter 2, I show that the capitalists' control over the labour process and the workers' consent or resistance was historically negotiated in the neighbourhood. Capitalists exerted their control over the working class in the local churches, fishing clubs, Sunday schools and Boards of Overseers. Workers organised their resistance in the local pubs, workingmen's clubs, allotment co-operatives and through illegal betting, poaching and trade of tobacco and spirits. More generally, my historical evidence suggests that during early capitalism the workers' consent to capitalist factory production was created outside the factory gates, where the early steel working class

and its trade unions were co-opted into the ethos of factory production through the capitalist ideology of self-improvement, 'respectability' and its promises of new standards of working class consumption and hygiene.

In my shopfloor ethnographies, I show that Burawoy's claim of the relative homogeneity of the workers' consciousness at the point of production in 'monopoly capitalism' is true for UNSOR but not for Morris, where the internal conflict between 'hot' and 'cold' workers reproduces the historical fragmentation between 'artisans' and 'proletarians'. In fact, the 'hot workers' of Morris sell their production independently from the owner in informal markets located in the neighbourhood and relying on webs of friendship and kinship. This fact transforms them into quasi-capitalists who seek profit as well as receive wages and turns the conflict between capital and labour into a conflict between different labour consciousnesses within the workforce. Finally, in my neighbourhood ethnography, I show the role of the local pubs and families in redistributing wealth and jobs locally and in preserving and transmitting ancient forms of working knowledge and working class consciousness.

My third argument follows from M. Burawoy's claim that the state affects the politics of production in two ways: by determining the conditions under which labour power is reproduced and by determining the conditions on which labour power is used on the shopfloor (1985: 125-6). According to Burawoy, in capitalist 'hegemonic regimes', state intervention reduces the workers' dependence on the sale of their labour power through welfare policies that guarantee a minimum level of living independently from the workers' participation in production and through industrial relations policies that guarantee basic workers' rights. The state's guarantee of basic workers' rights and level of subsistence turns capitalism from despotic into hegemonic, that is into a regime in which workers are co-opted into production through consent rather than through coercion. In my work I expand Burawoy's argument and consider not only the state policies that impact directly on the workers' consciousness forged at the point of production, but also policies that impact on the workers' consciousness forged outside the factory gates, such as housing, transport, educational, and health policies. My argument is that monopoly capitalism relies on state policies that encourage the consolidation of a stable manufacturing base with legitimised working rights and basic living standards and, *at the same time*, a social category of workers who rely on the

support of their extended families, a mixture of wages and welfare benefits and on un-unionised, unsafe and gruelling work in order to survive. In Burawoy's terms, my argument is that the state fosters the creation of two separate and interdependent economic and social spaces and of 'despotic' and 'hegemonic' regimes of production where coercion and consent can be flexibly articulated.

I make this point in Chapter 2, where I show that public health and safety, housing, welfare and social policies historically contributed to the fragmentation of the working class. For instance, the policy of the Board of Overseers of giving poor relief to the 'householder only' encouraged the fission of nuclear families from their kin resident in Attercliffe; social legislation aimed at reducing the labour of women and children decreased the productive function of the artisans' families; wage equalisation weakened the hierarchic webs of kinship and friendship that supported small-scale production. Moreover, medical debates about pollution combined with the provision of cheap and clean council homes outside Attercliffe fragmented the suburbs of the labourers spatially from the back-to-back houses of the artisans. I make this point also in my neighbourhood ethnography, where I show that today's public health and safety, housing, welfare and social policies fragment the working class into two social formations with different and interdependent productive and reproductive strategies.

My fourth argument focuses on the public narratives of 'industrial danger' and on the medical discourses centred on the workers' 'health and safety' that legitimated industrial production during early capitalism and do so again with de-industrialisation today.

As M. Nucleous' (2000) reading of Chadwick's *Report on the Sanitary Condition of the Labouring Population of Great Britain* suggests, the emergence of capitalist industrial discipline in Britain relied on the systematic policing of working class slums legitimated through the medical discourses of the polluting effects of poverty. In Chapter 2, I show that the imposition of capitalist discipline among Attercliffe artisans was legitimised through the 'medical' objective of improving the health of its inhabitants. In fact, the lethal 'grinders asthma', brought to the public attention in widely attended conferences at the Sheffield Mechanics Institute by two Royal Physicians, J. C. Hall and J. Holland, in the 1850s, was said to be caused by lack of ventilation. As I will show later, this

concern with ventilation has to be framed in the medical debate of the time centred on the transmissibility of 'nervous states' and illnesses through the atmosphere. According to the entrepreneurs and politician members of the Sheffield Corporation, improved ventilation could be achieved by relocating the Attercliffe artisans from their small workshops and crowded back-to-back houses into broader working spaces and more ordered working class suburbs. As I will document, some Attercliffe artisans refused to be concentrated into bigger working spaces or to be relocated outside the slums. Nevertheless, the promise of 'cleanliness' and 'order' appealed to other workingmen, especially the migrant labourers, who neither owned dwellings in Attercliffe nor controlled its small-scale economy.

In my shopfloor ethnography of UNSOR, I show that the company owners legitimised the implementation of flexible working patterns through the discourse of 'health and safety' and through the assumption – shared by managers, trade union officials, health and safety representatives and ultimately some workers themselves – that manual labour is 'alienating', 'boring', 'hazardous' and 'mentally impairing'. I argue that the company's 'health and safety' committee meetings were important political occasions when the workers, the management and the trade unions negotiated changes in the labour process or job cuts in the form of industrial compensation. With regard to the impact of the discourse about workers' health on the political economy of the neighbourhood, I also show that the public image of Attercliffe as an area of urban deprivation and social fragmentation, an image that ultimately relies on the same rhetoric of the unhealthy consequences of working class poverty, attracts considerable funds from central government. These are addressed to objectives of local economic and social regeneration and ultimately shift the social costs of the capitalist labour process from the private sector to the community. Finally, significant numbers of people in Attercliffe receive disability benefits whilst working in the informal economy. Their dependence on the state policy of welfarisation of casual manual labour ultimately legitimates the economists' and industrial psychologists' rhetoric of the disabling effects of manual labour and of the empowering potentialities of the knowledge economy.

My argument is that cultural and ideological assumptions regarding the physical and mental properties of the human body shape the workers' notion of 'skill', their efforts in

production, their perception of the coercive or free nature of their labour, their social relations on the shopfloors and their patterns of consumption and of social reproduction outside it. My work shows that in the past industrial capitalism relied on a medical discourse centred on the physical strength of the new class of industrial proletarians and on the desirability of its emancipation from the filthy and unhealthy social and economic spaces of Attercliffe. Today, both the capitalists and the state legitimise job cuts and the capital-intensification of the steel industry through the discourse of industrial danger and of the mental perils of manual work.

My fifth argument is a critique of Peter Laslett's claim of the characteristic 'nuclear' structure of British families. Drawing on J. Hajnal's (1983) study on pre-industrial household formations, Laslett (1983) claims that English households are strictly 'nuclear' – that is, constituted by the married couple and their children only and neatly separated from the households of their kin and parents. But while Laslett emphasises the typicality and invariance of nuclear household types in England, my detailed historical analysis of household structures and family patterns in Attercliffe reveals their long-term variance. In fact, working class households expanded into extended families and fissured into nuclear ones following the economic busts and booms in the steel industry and as a consequence of public housing, welfare and transportation policies. Anthropology, with few exceptions[7], has ignored the impact of the state on kinship, and of state policies on household structures. But, as I see it, 'nuclear' and 'extended' families are two structural types that vary according to macroeconomic and political factors. As for the working class families of Attercliffe today, they are not typically nuclear. Their members have aggregated into extended families due to financial and personal hardship and following the disappearance of state provision (council houses, schools and public transport) from the neighbourhood. This finding goes against the dominant orthodoxy of the Social Policy[8] literature about an increasing incidence of 'sub-nuclear households' in 'areas of urban deprivation'.

My last argument is a critique of the paradigm of flexible production. In its most renowned formulation (C. Sabel and M. Priore, 1984), this paradigm argues a radical transformation of western capitalist societies due to the increased sophistication of

[7] See Parry (2001) and Parry et al. (1999).
[8] For Sheffield, see Bowman (2001).

consumers' demand and because of radical changes in the technologies of production in mature sectors. 'Flexibility' is the instrument through which capitalist firms adapt to this structural transformation of society. Numerical flexibility involves the ability to change the size of the workforce in response to changes in demand; functional flexibility entails the ability to redeploy workers to different tasks; and pay flexibility ensures rapid adjustments of pay levels to individual performances and to the market rate for the skills in question. As a consequence of flexibility, post-Fordist factories are supposed to rely on highly capital-intensive and sophisticated technologies of production and on a core of multiskilled workforce, and to subcontract the production of less skilled and repetitive tasks to a peripheral category of subcontractors. The evidence of my fieldwork challenges this stereotypical image of post-Fordist production. In fact, in one of the two firms in which I worked, the introduction of flexible working patterns deskilled and fragmented the workforce, increased the labour intensity of the production process, the technological obsolescence of some machines and ultimately decreased the workers' consent to produce and their informal co-operation on the shopfloor.

I also criticise the claim, made by flexible production scholars, of the existence of stable institutional boundaries that separate skilled 'core' workers and 'peripheral' ones. These two categories, I show, work for the same employer, the former being accorded higher wages and better working conditions, whereas the latter are relegated to unsafe shopfloors located in Attercliffe and receive lower wages. Thus, the evidence of my fieldwork suggests that the fragmentation between primary and secondary labour markets and between labour-intensive and capital-intensive labour processes, takes place not only *between* firms but also *within* them. The main steel factories also externalise some phases of the production process to outside self-employed workers or petty capitalists who employ local cheap and un-unionised labour to adapt flexibly to the demands of the bigger producers. Thus, my work suggests that the presence in Attercliffe of unemployed manual workers, cheap B&B to accommodate casual workers, small shopfloors filled with old forging and milling machines, petty capitalists with strong social connections in the neighbourhood, and of skills that can be used in the smelting and machining of steel, encourages the main steel producers to externalise some phases of the production process into the informal economy of the neighbourhood and to establish contracts of employment with these 'outside' workers that vary from relatively secure wage labour, to relatively insecure hired labour, to self-employment.

This fact suggests that the economic appeal of flexible production relies more on the flexibility with which firms are able to expand and contract the boundaries between 'core' and 'peripheral' labour – and between formal and informal economy – than on the productivity of their capital-intensive labour processes.

In the first part of the thesis I claim that the same capitalist factory regimes created two interdependent 'meanings of labour'[9]: the one of the 'artisans' and the one of the 'proletarians'. I also claim that this working class fragmentation between 'artisans' and 'proletarians' was reproduced in the neighbourhood by public social and economic policies and through the industrial workers' subjective desire of emancipation from the polluting and dangerous social and economic spaces of Attercliffe.

The ethnographic section of my work provides a link between the history of the dialectics of these two working class formations and their articulations today. The two shopfloor ethnographies show that the two historical meanings of work that I have identified in the previous section, that of the 'artisans' and that of the 'proletarians', are reproduced in the capitalist labour processes today. Using Burawoy's terminology, UNSOR has a regime of production that developed from 'hegemonic capitalism', whereas that of Morris has developed from a new form of 'hegemonic despotism'. The latter, according to Burawoy, recently developed as a consequence of the greater fragmentation of the labour process and mobility of capital. Faced with the threat of sudden closures of their factories and of the migration of capital, today's workers are continuously forced into concessions to the capitalists to avoid the loss of their jobs (1985: 148-150). Thus, the comparison between these two regimes of production will help me to shed light on the logic of late capitalism and to test the hypothesis of flexible production scholars that late capitalism represents a historical break from the technological and social features of modern capitalism.

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[9] In an influential paper on the *Sociolgical Review* (1966), Lockwood highlights two types of working class 'images of society': the 'proletarian traditionalism', associated with such traditional industries as mining and docking, and the 'pecuniary' model of society, associated with the affluent workers, like the workers of Luton. My two types of working class consciousnesses – the 'proletarians' and the 'artisan' – also resemble Goldthorpe's 'Instrumental' and 'Solidaristic' orientations to work (1968: 38-41). Like the 'Affluent Worker project', my study is concerned with the motivation to work of industrial workers. Unlike it, my study claims that work orientation cannot be abstracted from the technological system and relations of production of the shopfloor. My position is closer to Beynon and Blackburn's claim, in their study of a luxury food factory in north-west England, that 'the way in which work is experienced depends neither on work factors nor orientations alone but on the interactions of the two (1972: 157).

The final part of my work explores the hypothesis, of the same 'late capitalism' scholars, of the disappearance of the working class from Attercliffe, an inverted version of the myth of its making. This myth, reinforced by the official statistics of the city council, tells of the social fragmentation of the ex-industrial neighbourhoods, whose families are hit by unemployment, divorce, violence and drug consumption, and contrasts the fragmentation of the Attercliffe sub-proletarians to the stability of the families of the aristocracy of labour. Chapter 5 and 6 show the relative social stability and economic self-sufficiency of the artisans who live in Attercliffe today and the fragility of the productive and re-productive institutions of the industrial wage workers. The chapters also show the interdependence between these two working class formations.

This last finding leads me to the conclusion, in which I deal with the question of whether 'late capitalism' entails the social and economic dissolution of the industrial working class, or rather whether 'late capitalism' is a modern version of 'early capitalism' and rather than working class dissolution, fosters ancient forms of working class fragmentation. My argument is that late capitalism, like early capitalism, relies both on the social and economic fragmentation and on the interdependence between wage labourers and hired workers; mass production and small-scale production; formal economy and informal economy; and between the nuclear families living in the industrial suburbs and the extended ones living in Attercliffe.

The general aim of my work is to challenge the technological determinism implicit in the myths of great capitalist transformations. My argument is that industrial capitalism – with its technology of mass production, shopfloor discipline, wage labour and sharp contrasts between 'capital' and 'labour' – as it developed historically, remained intrinsically entrenched in pre-capitalist social formations and modes of production: small-scale production; patriarchal discipline; the workers' self-employment and control over the labour process and their relations of 'status', 'friendship' and 'hierarchy' cutting across class formations and relations of production. If this is true, my work not only moderates K. Polanyi's and E. P. Thompson's claim of the great transformation that followed the rise of industrial capitalism, but also the post-Fordist scholars' – such as S. Lash and J. Urry (1987) – claim of the great transformation that our society is undergoing due to the disappearance of industrial capitalism.

On my first day in Sheffield, I had a long conversation with 'Maggy', the waitress of the 'Blue Café' in the Sheffield Railway Station. When she learnt that I had come from London to study 'the steelworkers', she sceptically replied: 'I thought that nowadays there were no steelworkers no more, but only machines. One modern machine can produce as much as thousands of steelworkers can do, Max. There are no steelworkers no more. I don't think that your research is a good one, Max'.

The evidence of my research contradicts Maggy's post-industrial vision – shared by academicians, politicians and most ordinary people – and shows that manual workers, their working class institutions, working knowledge and skills are still at the core of the capitalist labour process. Indeed, my work suggests that the combined effects of de-industrialisation and of the capital intensification of steel production in Sheffield have not fostered the disappearance of steel labour and the social dissolution of the working class. They have rather re-enacted ancient productive and social institutions (expanded networks of informally subcontracted production; the apprenticeship system; extended families; the political and welfare functions of the local pubs and bonds of trust and friendship that cut across civil society and the family) that ultimately blur the very distinction between capital and labour.

Notes on Fieldwork

I started to develop an interest in the political and cultural aspects of the labour process during my *Laurea* in Business Economics at the 'Universita' Commerciale' Luigi Bocconi, Milan, Italy, where I specialised in Organisational Behaviour. A short-term course at Harvard provided me with solid grounding in qualitative business analysis and familiarised me with the neo-institutionalist economic literature[10] that emphasises the cultural and political nature of managerial practices of labour organisation. The course in Managerial Accounting at Harvard familiarised me with the main techniques of financial and managerial accounting, with the way these techniques may increase the capitalist control over the labour process and with the political nature of supposedly objective economic concepts, such as 'cost', 'investment' and 'profit'. My doctoral

[10] Powell and Di Maggio (1991); Meyer and Rowan (1977); Zucker (1987).

thesis in Organisational Behaviour is an ethnographic study of a SFNs (Small Firms Network) in the building sector in Puglia, a region in the South of Italy where I conducted fieldwork for six months. The argument of the thesis is that small firms are embedded in local political and social institutions that make them particularly flexible and efficient in adapting to turbulent economic scenarios and that this efficiency is ultimately an unintended consequence of the chronic lack of state intervention in the South of Italy. I also have a few years of professional experience as a Human Relations consultant in the building, steel and telecommunication sectors. The research policy of the business firm in which I worked was to integrate quantitative and cost analysis with unstructured interviews with the employees and in-depth qualitative observation. Nevertheless, I was progressively unsatisfied by the very nature of business consultancy, because it isolates the study of economic organisations from their cultural and political context and because it is constrained by the profit goal of the capitalist who commissions the study.

This ethical conflict and my wish to broaden my theoretical knowledge on cultural, social and political processes led me to do an MSc in Social Anthropology at LSE. Anthropology provided me with the kind of theories (kinship, economic anthropology; political anthropology, cognition) that I needed in order to integrate organisational analysis with a broader cultural, social and political analysis and with solid grounding in the methodology of participant observation with which I could study the labour process from the perspective of the workers and socialise with them outside the workplace.

My access to the factories was not easy. Through a personal contact I had with a renowned Sheffield entrepreneur, I first tried to access Corus, the multinational corporation that emerged from the merger of British Steel and the Dutch Hoogovens in 1999. I had several interviews with the Personnel Manager of the melting shop and private conversations with the Plant Manager, Mr. Rodney. After three months of negotiations, I received a letter from Corus stating that for 'delicate political reasons' my research constituted a threat to the company and that my access to the company was therefore refused. A few days later 'Jim', a shop steward whom I had met in Attercliffe and with whom I had become friendly, asked me if I was interested in doing fieldwork in the plant where he worked. The plant was part of the forging division of Corus and was known among Sheffield steelworkers as the 'British Steel museum', due to its

obsolete rolling mill and derelict shopfloor. At the 'British Steel museum', I had a long and emotionally charged interview with Jim and the plant manager. Both were worried for the future of the plant and hoped that my presence in the plant could prevent the central management of Corus from closing it. In the presence of the plant manager, Jim told me that he would not renew the labour contract with the central management unless it agreed to have me in the plant. A month later Jim called me and told me that the plant was to be closed down in a week's time.

After this experience, I was introduced by 'Paul', an ex shop steward and now cleaner at Sheffield University, to Mr. Blum, an ISTC official. Mr. Blum was on very good terms with the owners of UNSOR, a steel factory that had been recently re-organised and whose workers were resisting the introduction of flexible working patterns. Mr. Blum wrote to the owners, asking them to allow me into the firm for a month. The owners summoned me for a formal interview in the company's meeting room. During the interview the two owners asked me if I could convince the 'guys' to accept to work 'flexibly and in teams'. The majority of the twelve managers of the firm – seated around the immense round desk – seemed unimpressed by my suggestion that 'the study of human factors in production facilitates processes of organisational change'. I later realised that the managers feared as much as the workers the strategic plans of the owners. Two days after the interview, I received a one-day training induction course in Health and Safety, a blue overall and brand new pair of protective boots and a desk located between the die shop and the coil department, whose shop steward was refusing to adapt to the organisational changes enforced by the owners. The owners made it clear that my access to the plant was limited to the 'cold' department and that my research had to last for no longer than one month. But soon the owners and most of the managers forgot my presence on the shopfloor and the workers took an interest in my research. Thus, without the formal consent of the owners or the managers, I started to work on day shifts in the rolling mill and on night shifts in the melting shop for an average of three days a week, under the supervision of the informal leaders of these departments. I left the shopfloor one year later, when the firm went into administration.

The workers supported my research for different reasons. The two melters considered me a precious apprentice to whom to pass their ancient knowledge of the melting process; the grinders appreciated my political beliefs and the scope of my research, and

the rollers were happy to share with me their long pauses in the break-room, their canned food and lewd jokes. Generally, the workers liked me because I worked and talked with them, and I relieved them from some heavy manual tasks and sometimes from some heavy emotional burdens. They also understood the political nature of my research and variously labelled my political involvement as 'philanthropy', 'class consciousness', or 'friendship'. Besides, the news of my refusal to be paid for my research – that spread on the shopfloor as soon as I walked out from the meeting room – had convinced the workers that, in spite of the fact that I had been employed by the owners, I was not 'one of them'. Generally, the managers thought that I was a 'trouble-maker' because I spent most of my time in the restricted areas of the company talking with 'the wrong people' or working on dangerous machines. Nevertheless, their initial opposition to my presence on the shopfloor was eventually dispelled by the contract that they made me sign – which released them from any insurance responsibilities in case of my industrial accident – and by their later realisation that since I had stepped onto the shopfloor, the workers had been happier, more productive and compliant with the management. As UNSOR's financial situation worsened and the owners' intention to close the firm became clear, conflicts between the managers and the owners emerged and their respective attitudes towards my research changed so that some managers strongly supported my presence on the shopfloor against the owners' determination of ending my research. When I started filming at UNSOR, the news of its imminent closure had already spread in the factory, and both managers and workers collaborated in the visual project with enthusiasm and pride, knowing that their work would be recorded on camera and that it would therefore survive the closure of the firm.

At the beginning of the fieldwork, my endless wait for the phone call from Corus and the disappointing responses to my request for help from local MPs, trade unions' General Secretaries and from the Secretary of Trade and Industry of the time (a 'Cliff lad' himself), convinced me that the best way to access a steel factory was to walk onto a shopfloor and ask for a job. Attercliffe, the ex-working class district renowned for being an 'area of urban deprivation' and for its high rate of unemployment and criminality, seemed to me the most appropriate place to start my job search, since it is precisely in these 'off limit' areas that jobless people in desperate need for work, find employment. Since I had bought a second-hand fishing rod I had started to fish along the river Don and made a few friends in Attercliffe. It was during one of these fishing

meetings that I came to know that they needed someone at Morris to replace 'big Dave'. The day after, I walked through the opened blue door onto the Morris shopfloor and asked Brian, one of the older workers, for a job. For a few days I replaced Big Dave at the 'bar chopping' machine. My ethical dilemma of having stolen Big Dave's job was soon cleared by the conversation that I had with Tony, another elder worker of the firm. Tony explained to me that Big Dave often gets so drunk that he needs several days off work to recover, that he would soon come back and that I would nonetheless be used to 'fill the gaps' on the shopfloor and be treated as a 'normal apprentice'. In the conversation, Tony explained me that in Morris, and indeed in Attercliffe, a 'normal apprentice' is not paid until he has been trained on several machines. After this period of training – usually lasting from six months to one year – apprentices are considered skilled enough to be formally employed but they are not always lucky enough to find employment in the firm where they have been trained. My access to Morris as an apprentice resolved my ethical dilemma and legitimised me in the eyes of the other workers. In fact, they appreciated the fact that I was willing to work hard and for free in order to 'learn the job' and they underestimated my role as young student and – even worse – as 'a Londoner'. To them, I was just one of the many young 'Cliff lads' in desperate need of a job.

Their perception of me as being a 'Cliff lad' consolidated when I started to take part in the social life of Attercliffe. At the beginning of the fieldwork, I had stepped a few times inside some Attercliffe pubs to find the entire crowd of customers staring at me in silence. Walking in Attercliffe on my own, I have been stopped, robbed, followed, chased and threatened. It was only through Teddy, one of the Morris workers and renowned 'Cliff lad', that I was allowed to walk freely in the Attercliffe streets and into the five pubs that constitute its 'soul'. In these pubs, steel jobs are redistributed, drugs are dealt, leaders legitimate their status in tense snooker matches, elderly people are helped and youngsters and prostitutes are employed by local pimps and drug dealers. These pubs are strictly off limits for people outside the community. The police rarely raid them and the 'Social' have come to terms with the fact that the 'Cliff' people on income support or receiving disability benefits do in fact work; that their families receiving tax credits are in fact already supported by their relatives or friends and that local petty capitalists receiving local regeneration funds from the central government

also evade taxes, employ children and use machines and labour processes so dangerous and hazardous that they were made illegal fifty years ago[11].

Seven months into the fieldwork, the Committee of the Attercliffe Liberal Club – after a half-hour long meeting – accepted me as official member of the club and I celebrated my promotion with Teddy, Brian and Tony – my best friends – with a colossal 'piss up' at Khaled's pub. I also became a member of the 'workers' snooker team and I learnt to fish properly and to walk in the countryside. Given the lack of housing in Attercliffe, I lived for most of my fieldwork in a flat in central Sheffield and during my last three months of fieldwork I moved to Milly's 'Black Sparrow', a three storey B&B located in Attercliffe and populated by migrant labourers, pimps, drug dealers and unemployed. The place was dirty but the atmosphere friendly as most of the tenants were also 'Cliff lads'. Since I had become a 'Cliff lad', I learnt about many contradictions that characterise the fragile social world of Attercliffe. For instance, the elders' exploitation of child labour, that they simply call 'apprenticeship'; the local people's subtle contempt for ill or weak people; and their trade in drugs and sex. All these facts contrasted with local notions of 'help', 'solidarity', 'education' and with the 'Cliff' people's dignified attitude towards their labour.

These contradictions were also evident in the attitude of the Morris workers towards my research. In fact, they never acknowledged its political nature. This fact was partly related to their lack of formal political education and partly to their opposition to the language and practices of formal politics through which I tried to discuss my research with them. For instance they felt that there was no conflict between 'them' and the owner and, more generally, between workers and capitalists. In Morris the owner was rarely on the shopfloor and the workers virtually managed it thinking that their interests – the survival of the firm – were consistent with the owners' interests. Besides, the volatile economy of Attercliffe blurs the very distinction between 'self-employment', 'casual labour' and 'ownership' because people often go through all these three stages of employment in the course of their lives. Unlike the workers in UNSOR, who thought that the capitalists' profits relied on their exploitation, the workers of Morris didn't find anything wrong in selling their labour to the owner as they were also often in the

[11] The 'Clean Air Act' (1956) made illegal most of the small forges and machine shops.

owners' position of buying labour from some younger workers. During my eighteen months spent in Morris, I worked eight hours per day, for three days per week, following the career path generally followed by young apprentices. I swept the floor, cleaned the toilets, chopped the steel and learnt to forge, hammer, twist, turn and grind. More importantly, the workers slowly incorporated me into their informal social system, made of jokes, hierarchies, conflicts and of several rules through which they controlled production. On the day when I left Morris, the workers banged the hammers, tools, and bits they were working with, on their machines, producing a deafening noise on the shopfloor. It was their way of wishing me good luck, without excessively delaying the normal flow of production.

Notes on the film Appendix: 'Steel Lives'

'Steel Lives' is the title of the film that I made during my fieldwork in Sheffield. The film contains detailed visual descriptions of the technological systems and of the social interactions in Morris and UNSOR and allows the visualisation of the labour processes of the two factories that I describe in Chapters 3 and 4. In these chapters, descriptions of the labour process are accompanied by endnotes indicating the time code of the corresponding images in the film. The film also gives insights into the social life of Attercliffe and shows the Pinchmill fishing pond, the Attercliffe Liberal Club, Khaled's pub, the Loxley Valley, and the workers' homes, where I spent most of my weekends with my workmates.

I decided to make a film to accompany my doctoral thesis because of the difficulty of conveying the complex technical and social details of the labour process in written form. This problem emerged when I was working as apprentice in Morris and I was trying to write fieldwork notes on the complex knowledge that is required in order to perform a skilled job. Skilled jobs cannot be described through job descriptions, bureaucratic norms, productive standards or even through informal language. Rather, the good forging of a tool is 'felt' through the hands and the arms, 'seen' in the redness of the steel and 'heard' in the noise of the hammer. Given the subjective and silent nature of skilled work, my fieldwork notes resulted in a very poor description of the labour process in Morris and as an anthropologist I faced the problem of how to make it accessible to an academic audience. One day, I gave Tony my fieldwork notes,

describing the operations that I performed on his twister machine, and I asked him to read them and to give me some feedback. Tony took my notes home with him and, after consulting an engineering manual, re-wrote them completely. When he gave them back, I asked him if this was the language he would use to describe his job to a friend. The answer was 'no'. So how would he write about his job? 'We never write about our job', Tony replied, 'we don't even speak about it. We just work'. Tony discussed my problem with Brian, who a few days later gave me a camcorder that I could use on the shopfloor to record the production process in non-written form. Margaret Dickinson, of Marker Ltd., happened to see the blurred images that I had shot in Morris with Brian's camcorder and decided that – with a professional cameraman and a sound technician – a full-length documentary of Morris could be produced.

I discussed the script of the film with the workers of the two factories and this discussion stimulated them to reflect on the nature of their jobs and on the images through which they wanted to be represented. The process of filming radically changed the social texture of the two shopfloors and my relationships with my informants. My new role as the director of the film crew struck some of my friends as contrasting with my previous role of manual apprentice and my control over the film process created unexpected oppositions, collaborations and discussions in the workplace. The film was made thanks to the unpaid collaboration of Steve Jinks, Paul Fletcher and Brian Ellis who respectively acted as cameraman and sound technicians, and thanks to Margaret Dickinson's financial, moral and professional support. 'Steel Lives' was screened at the Sheffield International Film Festival together with other films of the 'Jandarshan' project, set up by Margaret Dickinson in India. These films provide insights into the lives of the people employed by the Bhilai Steel Plant and on the social change which accompanied industrialisation in the central Indian region of Chhattisgarah. Several workers of the two factories attended the screening and the debate on the social effects of industrialisation in Britain and India. The workers very much liked 'Steel Lives' and told me that the screening and the debate had been a rare opportunity for them to think of their work in a broader social and political framework.

The film has a special meaning for me because it holds the memory of working people and of workplaces that were part of my everyday life in Sheffield and that have now

disappeared and because it has made my research accessible and meaningful to my steelworker friends, to whom the film is dedicated.

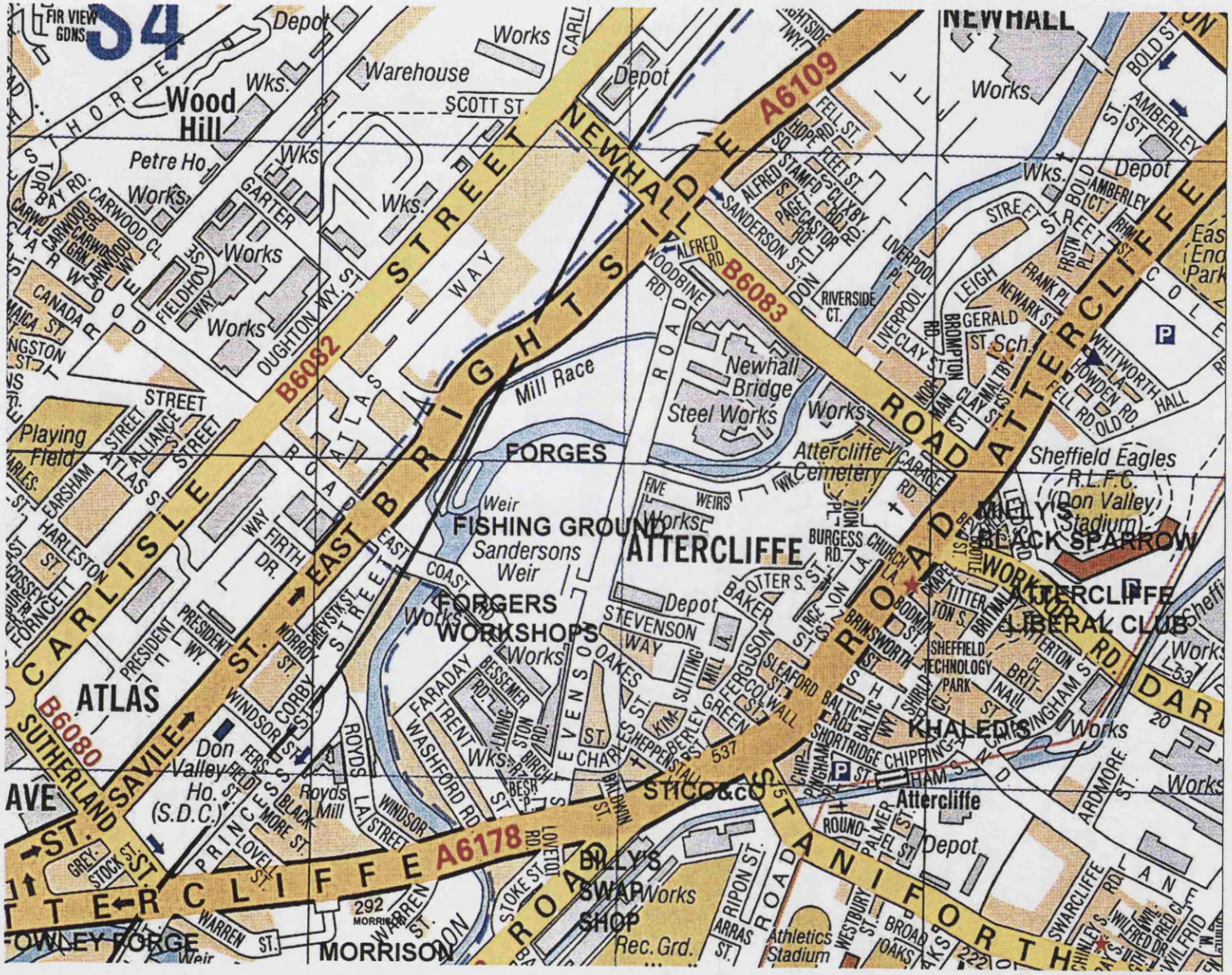
THE PLACE

Attercliffe is located in the East End of Sheffield. By contrast with the West, where the residential part of the city suddenly ends in the countryside, in Attercliffe the steelworks – both derelict and in use – punctuate the Lower Don Valley as far as Rotherham.

Attercliffe's river Don is a very peculiar mixture of ancient, modern and post-modern layers of natural and human artefacts. In fact, medieval grinding wheels and weirs alternate with derelict 19th century steel mills whose red brick facades are overgrown with weeds and dotted with pigeon nests. From the broken windows of these mills, noise of presses and workers' voices emerge amplified by the vastness and emptiness of the shopfloor where they are located. The river bank has been landscaped and a path that from the city centre ends at Meadowhall – where the biggest shopping mall in Europe was been created in the 1980s. As a result, groups of walkers go daily from their homes to Meadowhall, passing through 'nature' and gazing at the ruins of the industrial era and imagining the ghosts of its workers hidden in them.

The electrical shop, Billy's 'swap shop', the second-hand tool shop, the 'Greek Sauna', the Gypsy Traveller Centre and several pubs punctuate Attercliffe Road until the Attercliffe Cemetery that stands on the top of a hill. The gravestones of the dead steelworkers are turned toward the valley overlooking the big plants and the small shopfloors dotted along the river. The gravestones of local entrepreneurs and MPs are turned towards the street, inscribed with sober statements and facing each other in a circle as for a business meeting. Turning into Worksop Road, Khaled's, Milly's home and the 'Lib Club' are dwarfed by the Arena and the local scrapyard. By the yard, a Gypsy site is partially hidden between the 'Bingo' palace and the 'Vodafone' call centre.

A bridge separates Workshop Road from Darnall Road. Below the bridge, the Tinsley canal flows along the invisible 'North/East frontier', the border between the Cliff lads and the Pakistani community. On the bridge, the 'King's Head' – the last bastion of the white community – provides the locals with daily passes to fish in the canal. Crossing the frontier, a row of hairdressers, betting agencies, butchers, mosques, community centres and corner shops reveal the dense social and economic activities of the Asian community. The A6102 links Darnall back to Attercliffe Road and both merge into the M1 highway at Junction 34, whose roundabout is dominated by the gigantic 'Coca Cola Cupola' of the Meadowhall Shopping Centre.



Map of Attercliffe

(Fig 1)

PART ONE
WORKING CLASS HISTORY

CHAPTER ONE: PRODUCTION

Introduction

In this chapter, I trace the history of the technology of production and of the social relations of production that developed in the steel industry from early capitalism to late capitalism. My intention is to contribute to the debate on the nature of early British capitalism, as it has been framed by some business and political historians[12], and to shed light on the continuity between early and late capitalism. In his seminal work *Scale and Scope* (1990), Chandler claims the superiority of American 'managerial' capitalism at the turn of the century – based on investments in mass production facilities, in national and international market distribution networks and in scientific management – over British 'personal' capitalism which failed to transform itself into a modern system of mass production 'due to the fact that the founders and their families continued to dominate the management of the enterprises' (ibid: 253). The author's overstatement of the industrial efficiency of mass production has been widely criticised[13] and it is not my intention to reiterate these critiques here. My point is that Chandler's emphasis on the 'failure of British capitalists' to transform early factory production into modern industrial production, overstates the ability of the capitalists to create new technologies of production and to enforce 'modern' methods of labour organisation. Unlike Chandler, my chapter highlights the role of the state and of the workers in reproducing capitalist technologies and relations of production.

Chandler's emphasis on the greater efficiency of the technology of mass production and of managerial techniques of labour organisation of industrial capitalism, is mirrored in Polanyi's (1944) and Braverman's (1974) account of their greater exploitative potential. For instance, Polanyi's account of the 'great capitalist transformation' of society during early capitalist production, exaggerates the capital-intensity and mechanisation of early capitalist factory production and therefore the degree of control exerted by the capitalists over the proletarianised peasants through the intensification of production. Similarly, H. Braverman, in his historical account of the development of Scientific Management in the US, claims that the capitalist mode of production involves the

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My reconstruction of the organisation of labour of nineteenth-century firms draws on three sources: oral history personally collected regarding more than 150 years of labour practices; archive material at the Sheffield Local Study Library; and secondary sources and publications.

[12] Polanyi (1944); Braverman (1974); Chandler (1990); Meiksins-Wood (1991).

[13] See for instance Sabel and Zeitlin (1985); Sabel and Priore (1984).

progressive hegemony of capital over labour through extended managerial apparatuses and the deskilling technology of mass production.

My historical evidence modifies the claim that industrial capitalism emerged as a new and more powerful – or more efficient – regime of production and shows the continuity between industrial capitalism and proto-capitalist forms of production. For instance, during early capitalism in Sheffield, the capitalist factories in the steel sector mixed unskilled proletarians who sold their labour to the capitalists, with skilled artisans who owned the tools of production, worked partly for the capitalist and partly for their own profit, and complemented industrial production with farming well into the 20th century. Similarly, in Sheffield, 'monopoly capitalism' did not develop as a more efficient mode of capitalist domination, as Braverman suggests. It rather developed as a consequence of the emergence of a modern nation-state and of the expanded demand for armaments during the two World Wars. Nevertheless, this 'national economy' of steel production – with its technology of mass production, managerial organisation of labour and national markets – coexisted, throughout the 20th century, with the small-scale production of the artisans, embedded in the social and political texture of the neighbourhood. In this light, Braverman's claim about the deskilling effects of capitalist production, proved true for the proletarians but not for the artisans.

The objective of this chapter is to challenge deterministic[14] technological assumptions regarding the compulsive power of modern technologies of production and forms of industrial discipline. I also aim to highlight the role of the workers in manipulating technical systems in order to increase their control over the process of production and the role of the state in fostering technological development and industrial discipline. As for Burawoy, I suggest that the capitalists increase the free to paid labour ratio by incorporating the workers' technical knowledge and control over the process of production, rather than by deskilling them through the mechanisation of production and managerial control. Unlike Burawoy, my historical evidence shows that it is precisely the fragmentation of the workers' consciousness at the point of production – between

[14] In this chapter, I rely on several anthropological contributions – Mauss (1979); Gell (1992); Pfaffenberger (1987; 1992; 2001); Ingold (1993; 2001; 2001a); Keller (2001) and C. and J. Keller (1996); – that show the cultural specificity of technological systems. In this light, machines on the shopfloor not only enforce capitalist discipline and relations of production but they are also used by the workers to manipulate their physical and social environment; to communicate their authority, fears and emotions and to negotiate the boundaries between 'labour' and 'capital'.

the artisans' hierarchic relations in production and their extra economic motivation to work and the proletarians' notions of free labour and their collective games of production – that allows this incorporation to take place. In other terms, it is the split of the workforce between the technologies, social relations and moralities of the 'artisans' and of the 'proletarians', and their mutual opposition, that hides capitalist' authority from the shopfloor.

In *The Pristine Culture of Capitalism* (1991), Ellen Meiksins-Wood, criticises the 'bourgeois paradigm' that claims the failure of British capitalism to modernise during the nineteenth century and its inherent weakness today is due to 'antiquated institutions and cultural attitudes that have remained tenaciously in place since the early emergence of English capitalism' (ibid:11). The author criticises the paradigm's view of British capitalism as an 'imperfect capitalism', due to its only partial rupture with its feudal past and suggests that it was precisely the incorporation of pre-capitalist relations of production and social relations into the capitalist mode of production that made British capitalism powerful, rather than weak (ibid: 37). In the light of the recent post-industrial emphasis on the efficiency of small-scale subcontracted production and of flexible forms of labour organisation in mature sectors, the historical failure of British capitalists in bridging early factory production and the modern system of mass production, can, in fact, be read as a remarkable achievement. Today, the existence of small and unsafe shopfloors where artisans melt, forge and machine steel with obsolete machines and flexible forms of labour organisation, allows the capitalists to combine the system of mass production with quasi putting-out systems and to shift the social and organisational costs of industrial production to the workers themselves.

Thus, this chapter shows the historical emergence, and interdependence, within capitalist factory production, of two working class formations: the 'artisans' and the 'proletarians'. In Chapters 3 and 4, I will show how these two social formations are reproduced on the shopfloors of the steel factories today. My general point is that capitalism historically incorporated and transformed previous social relations, technologies of production and forms of labour organisation into its successive developments, rather than developed as a linear succession of stages of social relations and technologies of production. My claim is that, paradoxically, the continuous

incorporation of past forms of labour organisation and of labour consciousnesses into 'modern production' gives capitalism its power of regeneration.

History of steel

(A) The cutlery industry

In the past, the four valleys of Sheffield were scattered with hundreds of grinders' wheels[15]. Sheffield grinders were a peculiar mixture of farmers, industrial workers and entrepreneurs, living in small cottages along the rivers where they would hire the power for the wheel from the local aristocracy. Grinding required a small amount of capital to start, it was easy to learn, and could be easily alternated with farming during the winter season.

Grinders relied on a network of families who worked tools on contiguous processes and exchanged them along the same value chain 'just in time' – that is, following the orders coming from the producers located at the end of the production process. These exchanges were not entirely 'economic' as they were regulated by the customary rules of the Master Cutlers and the local aristocracy who controlled the rivers, their power and fish. Working without external supervision or co-ordination, the hierarchy governing the grinding mill was a heterogeneous mixture of family relations and hierarchic ones between grinders, their children and the apprentices. These last – with the silent consent of the bodies supposed to protect the customary world of the cutlers – often lived in conditions of semi-slavery. Well into the 1850s, in Sheffield there were only a few masters, either collecting the tools along the production chain and selling them in more or less distant markets or concentrating different kinds of cutlers in the same mill where the whole product could be processed. But mostly, cutlers were independent workers producing scythes, grass hooks, hay knives and other agricultural edge tools for the local market[16].

Side by side with these rural workers, a more entrepreneurial category of grinders developed in Attercliffe. As Berg (1993) has elegantly shown, these artisans were

[15] See Hey (1998: 133).
[16] For this point, see Tweedale (1995: 159).

involved in several businesses and owned the back-to-back houses where they had installed their tool workshops. According to Berg, this peculiar form of small-scale industrial production was 'neither the artisan production with all its attendant mythologies and anti-communal values, nor was it the hierarchical managerial capitalism of Chandler's epitome of the 'American system of manufacture' (1993: 36). Rather, this was a peculiar kind of urban, small-scale and familial capitalism, where the spaces, interests and morality of the family blurred with the spaces and rules of business and intermingled with the industrial production of the capitalist mills of Attercliffe. As regards their markets, this category of artisans produced pocket knives, watches, fine cutlery, razors, carvers and umbrella frames for the urban market that was developing in Sheffield following the changing wants and fashion of the rising industrial bourgeoisie.

These two categories of cutlers reacted differently to the diffusion of the early capitalist factories. The journeymen involved in the production of rural tools and in networks of small-scale household production, opposed the concentration of capital within the modern workshops, which – in the form of modern milling, forging and cutting machines – would take their labour away. In fact, the production of agricultural tools involved skills and operations that could be easily mechanised and concentrated under the same roof. In 1860 the cutlers' trade union, which amalgamated more than 100 trades, was formed. The cutlers' union violently opposed – through bombing, sabotaging and kidnapping entrepreneurs and scabs – the spread of anthropomorphic machines with several mechanical arms and solid bodies of steel inside the capitalist mills. In fact, the mechanical arms, belts and joints of these machines were able to reproduce and amplify human movements and therefore to substitute human labour and to intensify the scale of production. On the other hand, the urban 'little mesters' were petty capitalists who had their own workshop and journeymen and they did not oppose mechanisation. Rather they opposed 'competition', that is the concentration of the cutlers' trade in the hands of a few capitalist middlemen and the cutlers' company[17]. Because of their greater skills and control over the process of production, they perceived the recent development of fully integrated mills in Attercliffe, not as a dangerous concentration of machines in competition with their labour, but rather as an expanded

[17] In the Sheffield Telegraph (8 February 1848) an Attercliffe 'little mester' claimed that the new 'Patent Law' and the Cutlers' Company's control on the cutlers' tradesmarks restricted competition and favoured the big capitalists.

marketplace where they could sell their production whilst maintaining their independent businesses.

(B) Early industrialisation and the Attercliffe working classes

As a consequence of the development of the heavy trades, the Attercliffe township population grew from 4,156 in 1841 to 35,883 in 1891, at a rate over three-and-a-half times faster than that of the borough of Sheffield as a whole, the population of which rose from 111,091 to 324,200 during the same period. Between 1851 and 1891, employment in Sheffield steelworks increased over fourfold, prompted by such firms – located in Attercliffe – as John Brown, employing 5,000 men in 1872, and Cammell's, with a workforce of 4,000.

Between 1850 and 1890, the major steel companies in Sheffield competed with each other in the same market and with the same technology of production revolving around the newly invented Bessemer converter, a small furnace that replaced the crucible pot – thus allowing economies of scale in the process of steel melting. The invention of Sir Henry Bessemer, in 1854, made possible the production of large quantities of low quality steel for railways, ships, bridges and other heavy engineering works. With Bessemer, some of the small workshops of the cutlers and tool-makers were incorporated inside the newly built 'heavy' steelworks. On the shopfloor, the newly invented machine had two main impacts. Firstly, it weakened the power of the 'puddlers', the labour aristocrats who stirred the iron in the furnace for half-a-day and hammered and rolled it into 'wrought iron' bars. Secondly, it allowed a continuous flow of production by reducing the times and increasing the tonnage of each heat. As a consequence of the amount of hot steel that was produced and rolled on a bigger scale, the shopfloors expanded into internal railways, yards and roads where cranes, cars and ladles increased the mobility and predictability of the production process.

Nevertheless, in spite of the fact that by 1873 the Sheffield district had a Bessemer steel capability of about a quarter of a million tons per annum[18], the Sheffield steelworks never achieved the degree of scientific organisation of their American counterparts. In

[18] Tweedale, (Ibid: 66).

fact, unlike in America, in Sheffield, mass production was achieved by multiplying labour, rather than by substituting it with big capital[19], and shopfloors became vast spaces containing several small furnaces and small rolling mills used in a parallel fashion by labourers performing virtually identical tasks. Besides, the mass production of low quality Bessemer steel coexisted with the production of crucible steel by skilled melters and with the rolling, forging, hammering and grinding of tool makers, blacksmiths and other skilled artisans. These last still followed ancient notions of 'just price', and assessed the quality of the heat 'with their eyes' rather than with the metallurgists' pyrometer.

Thus, in the emerging steel conglomerates in Sheffield, side by side with the unskilled handlers, drivers and slingers required by the 'heavy' production of Bessemer steel, the shopfloors contained a variety of 'tradesmen' and artisans performing specialised tasks often in competition with each other. Blacksmiths still worked independently in their small workshops and sold their products to middlemen who re-allocated them in the production process. Similarly, the melter working at the open-earth furnaces agreed with the over-looker on the daily amount of steel to produce, and on its price, and distributed the daily income among his working group, mostly composed of kin and affines. The ancient cutlers' practice of 'hiring labour' was incorporated onto the shopfloor so that the skilled workers conceived of the wages they received as 'incomes' deriving from the sales of their products – discounted by their rent for the owners' spaces and sometimes machines – rather than as a payment for their labour power[20]. The 'sliding scale' system[21], that linked the wage for each trade to the market price of their products, reconciled the principle of the market with the necessities of co-operation in the factory. In fact, if puddlers, blacksmiths, melters and rollers received different wages according to the prices of the finished bars, or ingots or tools they produced, the capitalist was the main transactor within the factory gates and he therefore controlled the overall flow of production.

[19] Contrary to the economists' wisdom that economies of scale are directly related to capital investments, ultimately, economies of scale are related to labour's productivity.
[20] See Biernacki (1995: 408) and Tweedale (ibid: 162).
[21] The sliding scale originated in the iron trade around 1830s when the puddlers indexed their remuneration to the selling price of the iron.

If the availability of 'tenant-workers' was important for the master to increase the scale of production without having to sustain the costs of a fixed workforce, their mobility between different factories, and their fragmented loyalties to different masters[22], created additional disciplinary problems within the factory. In fact, unlike Germany and America, where 'discipline' and 'productivity' were enforced on the shopfloor through fines[23], in Britain there was no civil law through which masters could enforce stable contractual relations. In order to punish the workers' breach of contracts they had to resort to the penal code. Alternatively, the British masters enforced discipline by locking latecomers out of the factory gates.

This explains the symbolic importance of the factory portals in the industrial architecture of the late 19th century and of the great authority of the factory gatekeepers[24], who reported directly to the master on the daily illicit migrations across the factory borders. This custom of locking workers out, rather than imposing fines, brings out two related facts. First, it reinforces Biernacki's claim that during early industrialisation in Britain the masters did not organise the shopfloor according to notions of 'efficiency' and 'continuity' of the flow of production, but rather considered it as a space rented to semi-independent artisans. Secondly, it shows that some workingmen considered their work in the factory as an 'opportunity', rather than a 'necessity', and how their mobility across the factory borders allowed them to diversify their production and to work for different masters in the area[25].

In spite of the international acclaim received by the Bessemer converter at the London International Exhibition in 1862, and despite the fact that Sheffield steel entrepreneurs dominated the world market for railroads, armour and guns, Sheffield steel capitalism maintained a 'local' outlook not only because the local entrepreneurial families firmly controlled the capital of the major steel companies[26] but also because the

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[22] Berg (1993: 22).
[23] Biernacki (ibid: 112).
[24] See Baker (1898) and Elbourne (1914).
[25] Pollard (1963: 283) argues that this custom reveals that masters didn't claim ownership over the labour power of the workers, but treated them as contractors and tenants.
[26] From this point of view, Sheffield's industrial development strongly differed from the industrial development of Manchester and Liverpool, where the expansion of the railway between 1850 and 1890, fostered a 'second industrial revolution' (Hobsbawm 1968: 87- 100).

proletarianisation and disciplining of the steel workforce, on which the new system of mass production was to rely, never fully occurred.

In fact, unlike Thompson's claim (1967), the skilled artisans who controlled the 'light' phases of the production process were only partially co-opted to the 'time and work discipline' of industrial capitalism. They lived in walking distance from the firm in the densely crowded streets around the Wicker, where they often returned during the working day to supervise their own businesses conducted in small workshops built inside their house yards[27]. Besides, industrial capitalism did not transform 'home' into the realm of female reproduction and consumption, as Thompson argued. Rather, the back-to-back houses of Attercliffe were also workplaces where women and children actively worked in the tool-making and cutlery industry, especially in the finishing phases of the production process, to complement the 'industrial wages' of their husbands[28].

My historical evidence also disconfirms Polanyi's (1944) claim regarding the proletarisation of rural peasants due to their progressive alienation from the fields and to their increasing dependence on industrial wages. In fact, allotments scattered in between the back-to-back houses absorbed the activities of the cutlers and artisans during the seasonal downturn of industrial production and provided them, according to statistics of the time, with one fourth of the foodstuffs they consumed[29]. At the 'Heeley Metal Farm' the entire workforce farmed collectively in the fields enclosed in the factories premises and complemented their industrial wages with the sale of their agricultural produce in times of economic bust[30]. Farming was also intensively practised in the rural cutlery districts of Walkley, Crookes and Heeley, and in the eastern areas of Attercliffe, well into the 1930s, and the migrant labourers working at the heavy trades revolving around the Bessemer converter turned to their farms in their neighbouring agricultural counties

[27] Tweedale (ibid: 44); Berg (ibid: 35); Hey (1998: 160).
[28] See the reconstruction of Booth (1988).
[29] Seebohm Rowntree's study of budgets in 1901 revealed that gardens and allotments could provide a quarter of the food consumed by families. The intense farming and allotment activities of the Attercliffe cutlers was also reported in a series of articles in the Sheffield Telegraph during the years 1848, 1849, 1850.
[30] LSL (Local Study Library) LP (Local Pamphlet) 12 (5).

(Lincolnshire, Nottinghamshire) every time the demand for mass produced steel plunged and they were made redundant[31].

In America steel production boosted urban civilisation[32] and the mass-produced Bessemer steel materialised into intercontinental railroads, skyscrapers, bridges and roads that accommodated the crowd of labourers, white collar workers, engineers, architects and financiers gathering in the newly formed steel cities. In Sheffield, the development of the Railway Corporation was strongly opposed by the Duke of Norfolk; the city was deserted by the entrepreneurs – who built their gentry mansions in the western countryside – and urban development was left to the chaotic adjustments of migrants, property speculators and artisans. Thus, if in America during the era of mass production – as Misa has argued – technological development of steel was driven by the demands of governments, railway conglomerates, civil engineers, architects and financial tycoons, and channelled into the construction of ' a nation of steel', Sheffield remained trapped between its global market and its local capital, between mass production and craftsmanship, and between the pre-industrial work ethos of the artisans and the aristocrats and the protestant capitalism of the local steel entrepreneurs[33].

When Sheffield's lead in the bulk steel market ended (1870) some of its steelworks were still a mixture of putting-out systems and modern factories, its capitalists were middlemen without managerial formation and its workforce split between the independence and individualism of the tool makers and the subordination and collective organisation of the heavy labourers. At the height of the international competition in the bulk steel sector, the major steel companies in Sheffield relied extensively on the crucible process[34] – side by side with the Bessemer converter – and on the dense network of cutlers, forgers, blacksmiths and tool makers of Attercliffe to whom they outsourced increasing work.

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[31] Hey (ibid: 153).
[32] Misa (ibid) and Tweedale (ibid).
[33] The majority of Sheffield businessmen, Master Cutlers and magistrates were Wesleyan, New Connexion and Free Methodists (D. Hey, ibid: 209).
[34] In 1860 the firm 'Jessop' had 120 crucible holes, 'Sanderson Bros' 110 and 'Firth' 90. (Tweedale, ibid: 51).

(C) The economy of war and the production of the industrial proletariat

The 'economy of war' radically transformed the technology of steel production and the organisation of the shopfloors. The 'politics of armour'[35] had the effect of increasing the productive capacity of the 'heavy' end of the shopfloor and the flow of production of its 'light' end, of deskilling the artisans in the latter and empowering the labourers in the former, and ultimately of homogenising engineering and bulk steel production. From the point of view of political economy, steel companies expanded[36] in a state of monopsony, their private profits being entirely driven by the orders, standards and technologies imposed by the Admiralty. Thus, paradoxically enough, at the turn of the century, the main Sheffield steel companies achieved mass production when their productive capacity was already dwarfed by the productive capacity of the American and German giant steel conglomerates; they standardised the production of special steel rather than of low quality Bessemer steel; and they integrated their organisational structures in a situation of monopsony rather than of tight market competition.

The 1890s' arm race between Germany and England set new technological standards and processes for the four major steel producers in Sheffield. First, the battleships of the Admiralty required special steel instead of low quality Bessemer steel to be melted in the open-earth furnace. Unlike the 20-minutes blow of the Bessemer converter, it took from 4 to 12 hours for an experienced melter to add alloys and lime to a base of Bessemer steel, control the carbon content and slag formation, and pour the melted steel into ingots 15 by 18 inches in size. The open-earth furnace empowered the melters, whose intimate knowledge of the heat and of the bright and crystalline structure of high carbon steel ensured compliance with Admiralty standards. Unlike the melters of the Bessemer furnaces, the melters at the open-earth furnaces controlled the production process through their knowledge of the chemical properties of steel and the direct manipulation of the furnace's fire. Secondly, the machine shops increased their scale of production and their tasks were mechanised. Finally, thanks to the experiments in

[35] Misa (1995: 90-131).

[36] Before the War the iron and steel industries in Sheffield employed about 50,000; by 1916 nearly this number worked at the leading arms makers (Vickers, Hadfields, Cammell-Laird, and Firth). By 1918 total employment in Sheffield was approaching 100,000.

scientific management conducted by F. Taylor at 'Bethlehem and Co'[37] the standardisation of the tasks of the cutting machines fostered a new managerial regime that linked the performance of the workers to 'scientific' standards of production.

The knowledge of the heat treatment process that the skilled blacksmiths acquired through their observation of the colour ('bright yellow', 'cherry red') and consistency of the heat was transformed into public and objective measurements of temperature and motion, framed in cost accounting standards and abstracted into the company's engineering tables. Deprived of their knowledge of the properties of the fire, the blacksmiths became 'blue collar' workers who had to adapt to productive schedules of the superintendent – containing a speed ratio for each tool to be machined – rather than deducing their tasks from the physical properties of the material processed. Following his 'Essay on the piece-rate system' (1895), Taylor installed a planning department and a costing system to co-ordinate each single timed standard operation of the collar line on 'shopfloor2' into a complex engineering mechanism of automatic magazine feeds, overhead-belt drives and functional foremen. Besides, the mechanisation of the machine shops fragmented the workforce into machine shop labourers, whose production could be standardised and intensified, and the melters whose control of the open-earth process isolated them from the company's intensification of production[38].

Between the Wars, the increased competition of American and Continental steel and the related decline of sales to Japan, China and the British colonies created an unprecedented phenomenon: mass unemployment. In fact, in 1920 unemployment rose to 49,500; between 1931 and 1933, to 60,000 (34% of the workforce); and until the Second World War, there were never less than 20,000 out of work in Sheffield.
In these years, capital investments were diverted from the steel industry into capital markets (insurance, loans and foreign enterprises) so that Britain could consolidate its international financial dominance. In comparison with the German and American economies – where the banking sector and the steel industry were interlocked – the British steel industry was left without capital investments[39] and therefore started

[37]Misa (ibid) and Tweedale (1987) well document the connections between technological and managerial 'paradigms' in Sheffield and America.
[38] This contrast eventually ended up in the two categories of workers forming two different trade unions: the Iron and Steel Trade Confederation and the AEEU.
[39] Bill Moore 'The Sheffield Unemployment Movement'. Unpublished manuscript.

its slow decline. Thus unemployment was not only the direct consequence of the instability of the industrial sector, but also of the interests of the British bankers to fight inflation by cutting wages. The Sheffield industrialists reacted to the decline of the steel industry through mergers and concentrations. In fact, the United Steel Company in 1918, the English Steel Corporation in 1928 and Firth-Brown in 1930 merged into publicly-quoted companies, employing thousands of workers, concentrating on the manufactures of heavy forging and casting and on the mass production of alloy steel for engineering and armaments.

The economy of World War II turned the British steel sector into one of the greatest capitalist monopolies in the world, where the top four firms employed 40% of the steel workforce. War increased the scale of production, virtually dissolved trade union militancy, and fostered a drastic re-organisation of the shopfloor orchestrated and funded by the Admiralty, the War Office, the Ministry of Supply, the Ministry of Production and the Ministry of Fuel and Power. Accelerating the trend towards the homogenisation of the workforce deriving from the mechanisation of the machine shops, the economy of War melted the interests and conflicts of a differentiated workforce into a solid crowd of warrior-workers, whose pride and productivity rose with every official visit of the Queen, ministers and Army officials.

The 'rhetoric' of War, focused on the massive productivity of the 'heavy' steel industries[40], ignored the smaller steel firms. Besides, the engineering of the machine shops inside the leading steel firms expelled the tool-makers from the steel companies and brought them back into the small Attercliffe workshops. The skilled artisans and blacksmiths expelled from the steel firms found work either in the local tool firms or as 'hired' rollers, forgers and blacksmiths in the informal network of workshops scattered in Attercliffe[41]. These smaller engineering firms of Attercliffe provided lower wages, welfare provisions and worse working conditions than the factories co-opted into the economy of War. Nevertheless, the dependence of the latter on the volatile steel market exposed their workforces to greater risks than the small producers of Attercliffe. In the

[40] In September 1919, the Minister of Munitions, Winston Churchill, invoked the support of the British steelworkers claiming that the Great War was primarily a 'Steel War'. Quoted in Carr and Taplin (1962: 328).

[41] The practice of 'hiring' rollers, forgers and cutlers continued well into the 1970's according to Tweedale (ibid).

1930s, there were more than 300 small-scale tool firms in Sheffield – and many more informal workshops[42] – melting and producing tool steel for the whole country[43].

(D) The post war years: a nation of consumers

The years after the Wars saw massive reconstruction and mass consumption. Steel capitalists, trade union representatives and steelworkers alike, believed in the truth of the 'under-consumption theory' that had been taught to them since the 19th century in political economy classes in Ruskin College, Oxford[44], in the Sheffield Mechanics Institute and in the local WEA (Worker's Educational Association). On a general level, this theory stated that low industrial production was linked to low levels of consumption. Capitalists and workers had different reasons to believe in the under-consumption theory. In fact, according to the former, it meant that low consumer demand prevented the achievement of economies of scale in production, whereas for the workers low consumer demand meant that the capitalist would produce less and therefore employ less. Thus the capitalist encouraged mass consumption in order to increase their economies of scale and the workers, in order to increase the stability of their employment.

Indeed, in the years following the War, massive amounts of steel were needed to rebuild Sheffield's half bombed Victorian architecture and to give solid structure to the new patterns of working class consumption. In 1947 the 'Town and Country Planning Act' empowered local authorities to build 30,000 new houses. The CPRE (Council for the Preservation of Rural England) blocked housing development in the west, so that council estates developed along the north-eastern periphery of Sheffield in the shape of the high-density tower blocks of Park Hill and Hyde Park Flats whose thousands of dwellings, several elevators, schools and shops solidly relied on steel frames and structures melted and rolled in Sheffield. New stadia, ring roads, cinemas and shopping centres were built to accommodate the new patterns of working class consumption and to boost the production of structural steel.

[42] Personal conversation with Bob Beale.
[43] Tweedale (ibid: 215).
[44] Pugh (1951) shows that trade union leaders were given grants from the government to study at Ruskin College, Oxford.

At the microeconomic level, household consumption of vacuum cleaners, aluminium sinks, freezers, electric irons, televisions, caravans, cars and motorbikes increased the demand for high quality stainless steel, whereas infrastructural developments boosted the demand for low quality steel and increased the scope for standardisation of production. On the shopfloor, standardisation of production implied further homogenisation of the manual workforce. Homogenisation also increased due to the equalisation of the wage levels of machine workers, labourers and furnace men and the creation of a strong 'company culture', through company magazines, sporting clubs and organised tours to the seaside.

During the boom years, mass production progressively symbolised the increase in the level of wages and in the lifestyle of the Sheffield working class whilst fostering a new feeling of national belonging. When steel was nationalised in 1967, the British Steel Corporation merged 14 major companies and their 200 subsidiaries and became the second largest steel company in the non-Communist world with a total capital of £1,400 million and a labour force of 270,000. Lord Melchett – the BSC chairman – secured from the government a £3,000 million development plan (the largest in British history) based on an expansionist strategy on the Japanese model: large-scale, integrated steelworks, producing tonnage steels and economies of scale. The conflict between Parliament's notion of 'public steel' as serving the purposes of the interdependent manufacturing industries[45], and the BSC idea of public steel as an integrated multidivisional steel conglomerate[46], was resolved in their common belief that national 'economic development' was indissolubly linked to 'big', integrated and technologically mechanised steel companies at the expense of the smaller private 'mini-mills' whose electric-arc furnaces produced smaller tonnages of high quality steel.

The BSC equation of national industry with mass production soon became clear given the ruling that only companies producing more than 475,000 tons of crude steel a year should be admitted to the public sector. As a result, in Sheffield only three companies were nationalised (ESC[47], Park Gate and United Steel) whilst about fifty other steel companies were left in private ownership. Thus, in Sheffield, steel production and

[45] For an analysis of the 'The Iron and Steel Act' (1967), see Dudley and Richardson (1990).
[46] Where productive units were transformed into centres of profits competing with each other in the same market (ibid: 10).
[47] The English Steel Corporation was founded in 1929 from the merger of Cammell-Laird and Vickers.

labour diversified into mass-producing and publicly controlled steel companies, and small-scale engineering industries and mini-mills, whose profits progressively shrunk due to the BSC's aggressive pricing policy[48] and to its direct competition in several markets.

During nationalisation, the 60,000 steelworkers employed in Attercliffe were split between public and private shopfloors facing each other along Attercliffe Road. The melters, forgers and rollers in the privately owned Firth-Brown works in Shepcote Lane received higher wages than the melters, rollers and forgers performing exactly the same operations on the other side of the street in the public premises of the BSC River Don works[49]. On the other hand, BSC workers enjoyed lower rents in the BSC company houses, better welfare provision and more stable working prospects. The invisible line that divided public and private interests along Attercliffe Road had the effect of fragmenting the workforce and the trade unions, and of restricting their scope of action and political commitment within the boundaries of the firm. In fact, the ISTC and AEEU both had members working in the private and in the public sector, whose political encounter in the trade union offices went against the very grain of their competition in the steel market. Public and private workers who met in the local pubs started to avoid conversations about wages and working conditions[50] and to perceive subtle and yet significant differences in their lifestyles, housing and welfare provisions.

During the years of the economic boom, the youth of Attercliffe was more and more attracted to the public sector, where high and stable wages and welfare provision promised quick emancipation from the burdens of the family and the education system[51]. Interestingly, the evidence of the difference in wages and welfare conditions between public and private workers in Britain parallels the evidence of the same polarisation between public and private workers in the Indian steel sector, highlighted by Parry (1999; 2001) in his ethnography of labour in Bhilai, Madyha Pradesh. The informal seniority system, the clear company rules for advancement and complaints, the

[48] BSC supplied to the private sector 90% of its crude steel. Dudley and Richardson (ibid: 33).
[49] Personal conversation with Paul Mackey.
[50] Personal conversation with Paul Mackey.
[51] Personal conversation with Bill Moore.

shopfloor nature of trade union militancy[52], the stable relationship between their wages and national inflation and the sociability shared in the company canteens or during their long pauses near their machines[53], provided the public workers with stable and self-sufficient social interactions and with a sense of deep identification with the company and the – national – overall economic philosophy. During the era of national steel, the steelworker was also broadly perceived and appreciated for his male strength and sociability. The strongest workers set the rhythm of production and the wage structure for the whole plant[54], monopolised the trade union meetings and sports competitions in the firm and the attentions of the best-connected girls in the city[55]. The relevance of 'strength' as a primary quality of the Sheffield steelworkers also impacted on their attitude to health and safety issues. In fact, steelworkers despised eye, ear or clothing protections and walked in front of the furnace with their shirts open on their chests, overloaded themselves instead of using the cranes to shift bars of steel on the shopfloor and hid illnesses and disabilities from the gaze of their workmates[56]. This contempt for occupational illnesses and physical weakness not only reinforced the sense of cohesion deriving from dangerous working practices and from the collective sharing of physical efforts, but also created a narrative of dangerous labour and heroic deaths on the shopfloor.

This flow of national money and public attention towards the young, male and standardised economy of the heavy steelworks cut out the 'lighter' and elder workforce of the smaller engineering firms of the area and strengthened the link between these latter and the hired workers and self-employed artisans of Attercliffe. In fact, apart from the few private engineering firms that concentrated on special steel, the profits in the engineering sector plunged, and they increasingly relied on outsourced labour to the

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[52] In fact, the BSC dismantled the old system of collective bargaining and encouraged a system of 'local' negotiations at the territorial or company level.

[53] Graham Goddard has explained to me at great length the beneficial conditions enjoyed by public sector workers until the 1980s.

[54] Unlike during early factory production, when the ISTC ruled that the average worker's wage should be fixed on the productivity of the 'weakest workers', the discourse on the 'male strength' of the public steelworker reinforced the managerial practice, started with F. Taylor, of linking average wages to the levels of productivity of 'the strongest workers'.

[55] According to Bill Moore, girls with good social background were daughters of senior workers at BSC plants.

[56] According to Simon Pickvance of SOHP (Sheffield Occupational Health Project) the working class ethos of male strength prevented the Sheffield steelworkers from claiming industrial compensation even when the company proved willing to accept their claims. According to him, during the 1980s the situation drastically changed and workers' compensation became an instrument of political militancy.

local workforce to save labour costs. Dependent on the unstable incomes deriving from the outsourced labour from the private firms, and progressively de-unionised[57], the Attercliffe labour force withdrew from urban conspicuous consumption and to its Victorian dwellings that the council was threatening with a new plan of compulsory relocation. Besides, the small workshops of Attercliffe were progressively exposed to controls and restrictions from the environmental office, that in the name of the 'Clean Air Act' (1956) imposed fines, closures and technological re-conversions. Thus, the ageing Attercliffe working class couldn't afford a place on the luxurious velvet chairs of the local 'Adelphi' cinema or a ride on the electrically-powered glittering wooden escalator of the 'Banners' shopping centre[58]. The Attercliffe urban and industrial *renaissance* was mainly the privilege of the aristocracy of labour whose houses progressively moved towards Rotherham and Stockbridge, where heavy industry and capital was slowly migrating.

(E) Privatisation, decline and the rise of the service economy

Between the 1970s and the 1980s the BSC lost £2,846 million and its workforce declined from 252,000 to 166,400. After a long history of mergers, plant closures, strikes and redundancies, a series of joint ventures between the BSC and the private sector were symbolically named 'Phoenix' from the name of the bird of Greek mythology that reproduces itself at the end of each life[59]. The massive restructuring orchestrated by the joint efforts of BSC's new chairman – McGregor – and the conservative Prime Minister – Miss Thatcher – led to more than 52,000 job cuts, a reduction of 1 million tonnes of capacity per annum and to the decentralisation of pay bargaining. From the microeconomic point of view, the new plan was intended to restructure the private engineering sector with public money[60]. On the shopfloor, privatisation led to the creation of separate centres of profit based on functional specialisation ('General Steel', 'Strip Products', 'Rolling Products') with independent financial responsibilities.

[57] Personal conversation with Graham Goddard.
[58] Personal conversation with Freddy Pit.
[59] Ovid, Metamorphoses.
[60] According to Dudley and Richardson (1990), the government devolved more than £40 million to restructure the private sector.

In Sheffield, the opposition between the Conservative central government and the local Labour council ended with the creation of private-public partnerships aimed at redeveloping the economy of the Lower Don Valley. In 1988, the SDC (Sheffield Development Corporation) was granted full planning control for the area stretching from the Wicker arches to the M1 motorway (that is, Attercliffe), and £100 million to build the Don Valley Stadium, the Carbrook Hall Business Park, the Sheffield Arena and Meadowhall – the biggest shopping centre in Europe – on the site of Hadfield East Hecla Works, where Attercliffe Road meets the M1 motorway at exit 32.

According to the official statistics, by the end of the 1990s, steel employed only 10,000 people in South Yorkshire, and today in Sheffield it employs around 2,000 workers, the biggest employers being the city council (with 27,000 employees), the Sheffield Health Authority (with 12,800) and Meadowhall shopping centre (with 7,000). The official statistics also report the decline of Sheffield tool-makers from 2,000 in 1994 to a few hundreds today. In spite of this official picture, and contrary to the claims made by economists, politicians and social scientists that Sheffield has became a post-industrial city – split between service workers and the aristocracy of labour forming the 'core' workforce of mechanised and modernised steelworks, my research found evidence that in Attercliffe forge men, rollers and blacksmiths are still 'hired' as subcontractors for the local steelworks, whilst their wives complement their variable wages through equally precarious jobs in the informal economy of the neighbourhood.

Modern technological myths in steel production

Liberal economists read the history of the technology of steel production as a sequence of material achievements. Labour economists read it as a succession of political failures. My intention here is to read the historical development of the technology of mass production of steel as the outcome of the construction of the national myth – a specific variant of state ideology – and to analyse the historical variants of this myth on the shopfloor where the boundaries between local work and national politics are negotiated. As Ferguson (1999) has extensively demonstrated with reference to the Zambian Copperbelt, capitalism relies on several myths of modernity – urbanisation, industrialisation, domesticity – to create 'structures and processes of dis-connection' between the global and the local economy. In what follows, I will expand Ferguson's

theoretical framework to show that modern economic myths include not only 'false beliefs' and 'useful cosmologies' (1999: 13) but also 'working practices'. In fact, in order for the Copperbelt miners and the Sheffield steelworkers to 'believe' in the state and the capitalists' ideologies and in their myths of modernity, they have to experience these ideologies at the point of production at the crossroads between 'work' and 'politics'.

Local economy

In the case of Sheffield, the widely accepted deterministic assumption that the invention of the Bessemer converter created the modern factory system of mass production is misleading[61]. In fact, in order for the modern factory system to develop, the technology of mass production needed to combine with mass migration and urbanisation and with the development of a new administrative and physical national infrastructure, as happened in America at the end of the 19th century.

As the pamphlet of J.C. Holland (1841) shows, Sheffield's working class districts were characterised more by empty dwellings than by overcrowded ones, and by home ownership, rather than tenancy. In addition, many artisans lived in rural areas where they rented cottages and grinding wheels from the local aristocracy. Thus, urban concentration in Attercliffe was prevented by the fact that the housing market was controlled by the local families in Attercliffe and by the Duke of Norfolk in the rural districts. Urban concentration was unlikely to develop in Sheffield also because the labourers of the heavy industry were seasonal migrants who were highly mobile between their rented dwellings in Attercliffe and their neighbouring villages and did not therefore need stable residences and long distance transportation[62].

Secondly, the development of the factory regime required the ownership of the means of production by capital as well as rigid rules of work organisation and discipline enforcement. With regard to this second factor too, Sheffield was unlikely to develop a regime of mass production. In fact, the artisans' diversified incomes, their ownership of a highly mobile and light capital (tools, hammers, crucibles), as well as their

[61] This point has also been stressed by Berg.
[62] Hey (ibid: 153).

participation in the dense productive exchanges and transactions in the neighbourhood, combined with the lack of legal means for the capitalists to enforce discipline on the shopfloor, made the enforcement of a rigid discipline of mass production, as well as the creation of rigid boundaries between the firm and the outside, difficult.

Thus during the era of mass production, two kinds of workers faced each other in the early capitalist factories. The skilled artisans of Attercliffe saw the shopfloor as an enlarged marketplace where they could exchange products with the capitalist-middlemen. They understood 'capital' in terms of monetary exchange or equated it with the grinding wheel that they rented from the Duke of Norfolk, rather than with the cone-shaped Bessemer converter. Besides, for them the very distinction between 'capital' and 'labour' was probably hard to understand, given that capital was in fact incorporated in their body and perceived in the very act of performing labour. This category of artisans 'would work at home and be at home at work[63]' given their freedom to shift between the factory and the household, this latter being a 'working group' of extended kin and affines, rather than a nuclear 'domestic' family.

On the other hand, the unskilled labourers were forced into seasonal migration and to adapt to the precarious living conditions of the Attercliffe slums. On the shopfloor, the heavy Bessemer converter and the complex mechanism of cranes, chains and railways confronted them as 'capital' that orchestrated and monopolised their working efforts, mechanised their operation and gave speed and suppleness to their movements. As a consequence of their lack of control over the means of production, the unskilled workers sold to the capitalists their capacity to labour rather than their production and were more likely to accept fixed wages in exchange for their compliance with the factory regime.

Thus, during early industrialisation, two technologies of production and two social formations coexisted on the same shopfloor, the consciousnesses of workers involved in each differing radically because they were embedded in two radically different worlds. As I will show in the following chapter, the world of the artisans was a world of connections and of blurred boundaries between 'home' and 'work', 'production' and 'consumption', 'capital' and 'labour', 'discipline' and 'freedom', 'male' and 'female'

[63] This is Marx's definition of non- alienated worker (Capital, Vol. I).

tasks and public and private spaces. The world of the labourers was made of separations, migrations and forced mechanical movements revolving around the fixed capital and the rigid boundaries of the factory.

The National Economy

Mass production firmly established itself only when the state and the capitalists joined their efforts to broaden the markets for the consumption of mass-produced steel. Indeed, the Second World War not only created a huge market for the production of bulk steel for armour, guns, tanks and Spitfires but it also expanded the market for structural and engineering steel that was necessary to support the grand scale of demographic movements, administrative consolidation and urban expansion deriving from the construction of a national framework.

The Second World War also enforced discipline on the shopfloor on an unprecedented scale. Government inspectors, tight production schedules from the War Office, and rules of secrecy exposed the workers to the discipline of the military court and restricted their mobility between the factory premises and the outside. The unskilled labourers and their trade unions welcomed the standardisation of labour, the bureaucratic rules, the stable employment, the wage equalisation, the protective clothing and the increased welfare provisions associated with monopoly capitalism. 'Wage' became the monetary parameter to measure and remunerate their efforts, and the fact that its level was set by Parliament for the whole industry, reinforced their invisible link with the other proletarians of the nation.

The technology of mass production also changed the experience of labour on the shopfloor. The grand scale of the movements of its machines, the heavy noises of its gigantic hammers and the mechanical force of its cranes, made the workers aware of the amplified consequences of their individual actions and forced them into tight collaboration and interdependence. Besides, between the Wars, mass unemployment, a totally new phenomenon in Sheffield, reinforced the steelworkers' awareness of the amplified social effects of the technology of mass production. As I have stressed before, the national rhetoric of war also connected the histories of the workers and of the machines on the shopfloor with the history of the nation and with the lives of an

anonymous crowd of soldiers. World War II brought women into the melting shop, into the workers' committees and to the other side of the counter in the company canteens; it fostered illicit affairs, challenged gendered assumptions about human physical resistance and political docility and subverted – in the name of the nation – taken-for-granted rules of sexual division of labour.

Thus, the technology of mass production developed in Sheffield as a consequence of the fabrication by state and capital of national markets, shopfloor discipline and civil infrastructures for the nation. But it also developed when the workers started to perceive their labour as increasingly interchangeable, impersonal, and interconnected on the shopfloor and magnified into the grand dynamics of society.

When the Second World War ended, the mass production of steel was propped up by mass consumption and the development of huge markets of post-war reconstruction. During the 30 years of steel nationalisation, mass production of steel was subsidised by the state and directed to the welfare of the community. In Sheffield, the central government subsidised the city council and its steel producer to reshape the urban spaces and to expand them into greater stadia and cinemas, taller buildings, and denser networks of ring roads, elevated bridges and public – and free – transportation between the city and the newer workers' council estates. On the shopfloor, state bureaucracy and capitalist paternalism provided stable seniority rules, better welfare provisions and a rhetoric of familial unity and attachment that coupled the companies' increases of housing and welfare provisions to their young married couples. Outside the shopfloor, the beneficial effects of mass production could be seen in the higher standard of living of the working class and in the diffusion of freezers, vacuum cleaners, aluminium sinks, caravans, radios and televisions inside their households.

As I have shown above, the small-scale producers and hired workers of Attercliffe were excluded from the building up of the nation. First, this was because their products were not targeted to national but to local markets, and second, because their production did not have the same inter-sector impact as the production of structural steel. In fact if this latter boosted the production of several manufacturing industries, small-scale engineering was located at the finishing end of mass production. From the point of view of the small producers, their isolation from the pressures and attentions of the state

proved to be an advantage. In fact, they were less dependent than the bigger producers on the volatile demand and subsidies coming from the state and they could count on the web of cheap subcontractors – forgers, rollers, melters and blacksmiths – located in Attercliffe.

The capitalists and the state tolerated the underpaid and un-unionised workforce of Attercliffe and indeed fostered the fragmentation between public workers and private tool-makers and engineers. In fact, the presence of private machine shops and tool shops on the other side of Attercliffe Road – whose wages and workloads fluctuated according to the unpredictable logic of the market – reminded the public workforce that they worked not only for the nation but also to generate profit. Besides, the skilled artisans of Attercliffe still monopolised the knowledge required in the melting shop and in the tool room and thus were still recruited as fitters, melters, first rollers and machine workers by the major steel companies. Finally, since the 19th century, the Attercliffe informal economy was a safety net for the mass unemployed expelled from the steelworks during the cyclical slumps of the steel industry and this function of social safety net allowed both the state and the capitalists to save on welfare costs.

Thus, the old fragmentation within the steel industry between the proletarians and the artisan working classes, and their seclusion in two different economic and social spaces remained during the era of national economic development. Nevertheless, the flow of unemployed labourers from the steelworks into the local workshops and of skilled artisans from the workshops into the steelworks, made macroeconomics and local economy often meet.

Between the global and the local

With the privatisation of the steel industry and the mass redundancies of the last twenty years, the grand narratives of mass production and of working class solidarity disappeared and gave way to a new public emphasis on flexible production. The paradigm of flexible production relies on the belief of the beneficial effects of the collaboration between global capital and local labour[64]. Nevertheless, flexible

[64] For a full exposition of the flexible production paradigm, see Sabel and Priore (1984).

production is not only an economic paradigm, but also implies a new way of imagining the local geo-political landscape and the administrative and political boundaries of the country. In fact, it was not only the state's labour policy of curbing trade union militancy and its fiscal policy of encouraging small-scale, un-unionised and deregulated enterprises that displaced and dissolved the big steel companies from Attercliffe Road. The physical deterioration of the council estates, the disappearance of local job centres, the reduction of local bus routes and the closure of schools and social centres increasingly 'signified' in the eyes of the local residents the disappearance of the state and the dissolution of the nation into a variety of local spaces, actors and institutions[65]. In fact, the local job centres, police stations and council offices having disappeared from Attercliffe, the labour market has been incorporated into the neighbourhood pubs, welfare is locally created through family support and within expanded households and order is maintained following local notions of legality and morality.

Indeed, the new state ideologies and myths of modernity – decentralisation, deregulation, flexibility, downsising and the new theory of flexible production – can be experienced not only in the changing geo-political landscape of Attercliffe but also on its shopfloors. In fact, some workers perceive their smaller plants, reduced workforce, shorter hours of work and smaller machines as a morphological adaptation to the increased porosity and fragmentation of the national boundaries and as the disruptive consequence of global migration – of capital and labour – on the local economy.

Nevertheless, behind the global façade of the coca-cola cupola of Meadowhall shopping centre, the leisure industry and the steel industry still feed each other and old national interests re-emerge from the mixture of tropical palms, Bingo centres and Victorian forging machines of Attercliffe Road. In fact, the capital shares of the steel industry are still concentrated in the hands of the old capitalists – in the words of Mr.. Heaps 'the BSC mafia' – and its circulation bounded within the now invisible national boundaries. Benefiting from the deregulation of the labour market, national capitalists have intensified their production of bulk steel for the construction of call centres, shopping and leisure centres, stadia, roads and public buildings, by extensively subcontracting to the local workforce.

[65] Hakken and Andrews (1993) have largely documented this process of decentralisation of educational, welfare and housing provision following the 1980s in Sheffield.

As a result, in Attercliffe, the distinction between small capitalists, proletarians and 'journeymen' is blurring again. In fact, the small capitalists squeeze small margins of profits in the tool industry by 'hiring' local forgers, rollers and blacksmiths. These enterprises develop, consolidate and die out in the time span of a couple of years[66]. Some of the Attercliffe journeymen are subcontracted for a substantial amount of labour from the big steelworks, as furnace bricklayers, hired rollers, melters and cutters. Because of this, sometimes they accumulate enough money to open their own businesses, employing a local workforce: friends, relatives and pub-mates. Finally, the proletarians made redundant from the steelworks twenty years ago are returning to the same shopfloors to work as subcontractors – slingers, labourers, cleaners – in the massive melting shops of the local multinational steel corporations ('Forgemater', 'Abeta Steel').

Conclusion

The history of Sheffield steel can be read both as an ideological narrative and a succession of events. As Ferguson (1999) has convincingly argued, ideology freezes specific historical events and abstracts them into fixed symbols of historical development. The official history of Sheffield steel tells us of the rise of an industrial nation from the ashes of its medieval past. This historical progression was led by the technology of mass production that increased productivity and economies of scale and allowed greater division of labour and therefore cheaper labour costs. According to such economists as Chandler (1990), mass production emerged historically as the best strategy to dominate highly competitive markets and to expand production in mature sectors, thus bridging early capitalism into the era of monopoly capitalism. At the same time, according to the labour historian Sidney Pollard (1959), in Sheffield mass production attracted labour migrants from all over the country and fostered 'urbanisation' and this latter created the need for new administrative, hygienic and political national infrastructures. According to this technological narrative, mass

[66] 'Business Report', 2001. Sheffield Chamber of Commerce.

production was the motor for the creation of modern cities, international markets and – in the intersection between these two geo-political spaces – of modern nations[67].

Nevertheless, from my brief reconstruction of the development of the steel industry, it emerges that some events frozen in the 'theory of mass production' are located on inconsistent temporal frames and that they can be readjusted to show a different history of steel. First, the technology of mass production did not develop in the 19th century capitalist factories, but was already well established in the fully automated mills of the Fitzwilliam family in the 18th century. Second, the technology of mass production did not develop as an entrepreneurial solution to increased market competition. In fact, in Sheffield the system of mass production established itself only through the direct intervention of the state and when the steel industry was nationalised. Indeed, from the purely economic point of view, the choice of the steel capitalists of concentrating their production at the time when the steel market was already controlled by America and Germany proved a gross mistake. Third, flexible production has not made obsolete the technology of mass production and invented flexible forms of production ('just in time') and of employment (subcontracting). If anything, flexible production has reinvigorated mass production through the re-discovery of the ancient cutlers' practices of 'hiring labour' and small-scale and 'just in time' production.

The equally compelling narrative of the rise of the working class from the amorphous social mould of pre-industrial trades during the era of mass production and of its decline in post-modern times, misses an important point. That is, that industrialisation in Sheffield did not foster working class formation but profited from its fragmentation. Indeed, as I have shown above, mass production in Sheffield proliferated on the disjunction between proletarian and local artisans, and along the subtle line dividing the engineering and tool sector on one side of Attercliffe Road, and the steel sectors on the other. In fact, the steel producers needed – and still need – the Attercliffe artisans for their most skilled jobs as well as to put them in competition with its stable workforce in the labour market. Besides, the social safety net provided by the Attercliffe informal economy allowed them and the state to save on the welfare costs of cyclical unemployment.

[67] See Chandler, 1990.

Thus if the history of the Sheffield steel industry – with its loops back and forth through ancient and new working practices, economic actors and social formations – doesn't tell us much about 'modernity', it does tell a lot about the dynamics of capitalist systems. In fact, it runs counter to some widely accepted assumptions regarding the capitalist mode of production. For instance, Burawoy and Braverman have focused on monopoly capitalism to conclude that capitalism involves the intensification of production and specific forms of workers' consciousness crafted at the point of production. The labour historians Sidney Pollard and E. P. Thompson have stressed the specificity of the shopfloor discipline and of the social phenomena of urbanisation and proletarisation associated with capitalist production. Finally, Polanyi has traced the trajectory of modern capitalism as a progressive disembedding of 'economy' from 'society'. All these assumptions are only partially true when applied to the Sheffield case. Their limit lies in their equation of modern capitalism with monopoly capitalism and with the shopfloor discipline associated with the technology of mass production.

As I have argued in the introduction, official histories of economic development exaggerate the modernising or hegemonic role of the capitalists and their impact on the grand dynamics of economy and society. Unlike these approaches, my chapter shows that the system of mass production only fully established itself through heavy intervention of the state in the economy and, as I will show in Chapter 2, through governmental policies aimed at enforcing industrial discipline in the neighbourhood. I have also shown the important role of labour both in counteracting and in contributing to capitalist development. In fact, my evidence shows that the labour organisation, skills and working practices of the early 'artisans' were not destroyed by industrial capitalism but rather incorporated within it. The resilience of the artisans to the discipline of industrial production, was due to their control over some important phases of the process of production, their 'efficiency' in providing cheap subcontracted labour to the main steel factories and to the variety productive activities – farming, building, fishing – with which they complemented industrial production and escaped proletarianisation. Still today the artisans and the proletarians coexist within the same steel factories, as in Morris. They have different skills, working practices and social relations and therefore different 'consciousness', at the point of production, of what is 'labour' and what is

'capital'. In fact, for the artisans it is difficult to draw a distinction between the monetary returns deriving from their individual or collective piecework systems or from their individual market transactions in the neighbourhood – and the capitalists' profits and therefore between 'labour' and 'capital'. On the contrary, unskilled labourers can draw clear boundaries between 'capital' and 'labour', conceiving the former as 'machines' and the latter as a self-enclosed and pre-programmed series of tasks dictated by it.

Analysed at the level of the shopfloor and of the neighbourhood, state ideologies of production look less compelling and yet more stable that in the Zambian case, where economic progress and decline are two mutually exclusive narratives. In the Sheffield case, modernity and decline are two interrelated aspects of capitalist development achieved through the fragmentation of the workers and yet through their close interaction in interdependent economic spaces. In fact, in Sheffield the myth of mass production was achieved through the coexistence of modern proletarians and ancient tool makers and this coexistence between these two social formations smoothed the transition between small-scale and mass production during the 19th century, and between industrialisation and de-industrialisation today. From this point of view, the history of Sheffield steel does not read as a linear progression from the 'social' world and the simple system of production of the cutlers to the individualistic one of modern factory production[68] but rather as an awkward embrace between these two worlds[69]. In fact, the machines of mass production and the artisans' tools; global markets and local distribution; collective bargains and free riding; nuclear families and expanded households; national interests and local politics are still today the two sides of modern steel production, facing each other along Attercliffe Road.

Thus, capitalism derives its strengths not from its progressive disembedding of 'economy' from 'society', or from its sudden swing from the local and customary world of the cutlers to the global and impersonal rules of the factory, but rather from the mixture of these two worlds. Besides, capitalism reproduces itself not through the

[68]Berg (1993) and Samuels (1992) show the continuity between the actors, technologies of production and markets of Sheffield's small-scale tool factories and heavy steel industries and criticise overgeneralising notions of 'modern factory production' in Sheffield.
[69] I subscribe to Berg's critique of Sabel and Zeitlin's (1985) view of the historical division between small producer and factory production in early industrialisation in Britain.

visionary qualities of the entrepreneurs or through the hegemonic power of capital, but rather, paradoxically, due to the resilience of labour and its ability to challenge and adapt to modern myths with ancient tools and social arrangements. In fact, the incorporation of ancient labour practices of the artisans onto the modern capitalist shopfloors, transforms the conflict between labour and capital into a conflict between different historical meanings and practices of labour. In his cultural critique of the economic myths of modernity, J. Ferguson (ibid: 242) emphasises the power of capitalism in creating 'dis-connections' between 'global progress' and 'local decline'. In my work I suggest that the peculiarity of capitalism is its ability to reconcile the interests, actors and institutions of both worlds.

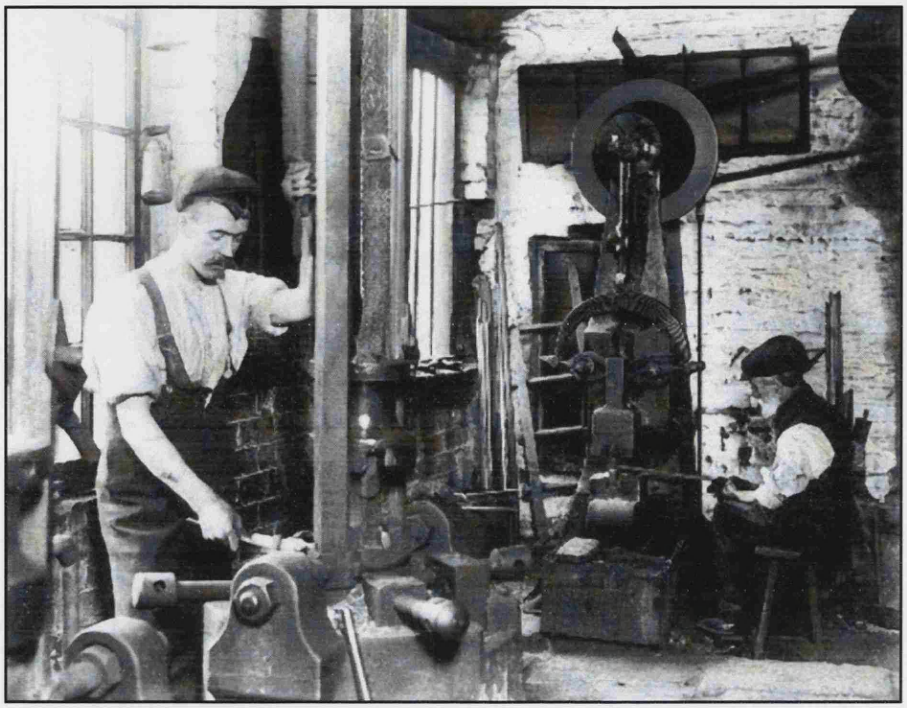

Figure 1. William Carr at the 400 Drop stamp and 'old Kirk' at the spring hammer in the Suffolk Works, c. 1902.

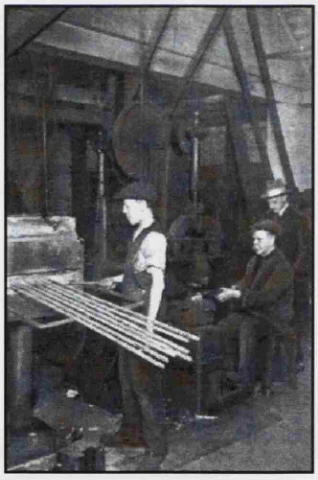

Figure 2. Young apprentice at the bar cutter.

Figure 3. Grinders at the F. G. Pearson, c. 1910.

CHAPTER TWO: REPRODUCTION

Introduction

In this chapter, I relate the history of Sheffield steel production to the social history of Attercliffe. In the previous chapter, I have shown the coexistence within the same factory regimes, from early capitalism to monopoly capitalism, of two complementary and interdependent working class consciousnesses: the consciousness of the industrial proletariat and the consciousness of the skilled artisans. That chapter challenged technologically deterministic assumptions regarding the technological and social trajectories of industrial capitalism and suggested that the capitalist shopfloor mixed technology of mass production and deskilling of tasks with the craftsmanship and the autonomous and fulfilling work of the skilled artisans and wage labour, and working class notions of 'equality' with self-employment and hierarchic relations of production. I concluded by claiming that today, de-industrialisation and state economic liberalism increase the fragmentation of the working class between these two antagonistic and interdependent subjective meanings of work.

In this chapter, I show how these two 'meanings of labour' have been historically reproduced in the neighbourhood in two ways. First, I highlight the role of the state in reproducing capitalist relations of production in the neighbourhood through welfare, housing and working policies. I describe these three sets of policies as forms of 'governmentality'[70], that is, of centralised and diffuse means of control of the working population, and I show that these policies fostered the development of nuclear households, working class suburbs and a new notion of 'leisure time' aimed at synchronising the time and spaces of the neighbourhood to the increasingly standardised times and spaces of production.

Secondly, I show how the workers reacted to these state policies and suggest that their different reactions to capitalist 'ideologies of modernity' reproduced the fragmentation between 'artisans' and 'proletarians' at the level of the neighbourhood. In fact, if proletarians and their trade unions politically opposed the capitalists on the shopfloor and in the Board of the Sheffield Corporation, they also subscribed to the myth of modernity of early industrial capitalism that presented working class emancipation in

[70] Foucault defines 'governmentality' as ' the ensemble formed by institutions, procedures, analyses and reflections and the calculations and tactics that allow the exercise of power' (1991: 102).

the form of improved housing, patterns of consumption, greater leisure time and independent and self-sufficient households. On the other hand, the artisans who were increasingly expelled from the capitalist factories, refused this discourse of modernity and retreated into the back-to-back houses of Attercliffe where their productive and reproductive activities were embedded in dense familial and local political networks.

In this chapter I also show that the public health discourse of the time presented capitalist development as a form of emancipation from the 'polluting' effects of working class poverty. This medical discourse not only legitimised systematic policing, compulsory relocation of the working class dwellings and the demolition of the artisans' workshops in Attercliffe, but also fostered working class fragmentation. In fact, physicians' statistics on the health of the working population and the medical surveys of the time, presented poverty as a contagious illness, linked to the peculiar mixture of 'houses' and 'workshops', smoke and dirt, animals and humans, in Attercliffe's back-to-back houses. As I will show, the doctors and the city planners of the time argued that in order to prevent epidemics in poor neighbourhoods, 'increased ventilation' and 'reduced physical interaction' had to be implemented by allocating the workingmen to bigger working and living spaces. In this context, some segments of the working class left the extended families, small workshops and houses of Attercliffe, because they subscribed to the public discourse centred on the perils of dense physical and social contacts and on the hygienic and medical advantages of working class 'separation'.

Finally, the present chapter challenges Laslett's emphasis on the historical invariance of nuclear household types in England, and suggests that 'nuclear' and 'extended' families are two structural types that vary according to macroeconomic and political factors. In fact, working class households expanded into extended families and fissioned into nuclear ones following the economic busts and booms in the steel industry and as a consequence of public housing, economic and welfare policies. The historical evidence that working class households expanded to cope with de-industrialisation, is confirmed in my ethnography of Attercliffe, where I show that the families of Attercliffe expand into extended families to cope with de-industrialisation today.

Early industrialisation and the Attercliffe working classes

In the previous chapter I showed that between 1860 and 1920 two technologies of production and forms of labour organisation coexisted on the shopfloor of the major steel companies in Sheffield. The technology of mass production of bulk steel implied standardised tasks performed by unskilled labourers and revolved around the Bessemer converter, whilst the technology of production of crucible steel required the skilled crafts of forgers, blacksmiths and rollers who controlled and organised the production process independently from the capitalists. Within the factory, the skilled artisans set the rules of behaviour of the working group and enforced discipline through their patriarchal status and they only partially subscribed to the capitalists' industrial discipline. If the market principle that attracted them into the factory premises allowed the capitalists flexible adjustment of the workforce to the industrial slumps of the steel industry, it did not enforce their authority and therefore ensure a stable and disciplined flow of production. Thus, in order to turn a flexible workforce into a disciplined one, the capitalists' control over the internal pricing system had to be coupled with forms of control outside the working context.

In this section, I highlight two main contexts of governmentality: the local government's policies of poor relief and working class housing. In Attercliffe, between 1860 and 1920, the main local political institutions, like the 'Overseers of the Poor', the 'Highway Board', the 'Board of Guardians', the 'Public Assistance Committee' and the 'School Board', were controlled by the steel entrepreneurs and by their company managers. Apart from this control over the local political institutions, the company managers, as I will show later, set the parameters for working class 'respectability' in the neighbourhood. In fact, if the main steel capitalists moved to the beautiful western suburbs during the 1840s[71], their company managers remained in Attercliffe, where they could exert a direct control over the working class during their leisure time.

[71] Pollard (1959).

Poor Relief Policy

Because of the many slumps characterising the early business cycles of steel production, the Attercliffe workers were strongly dependent for their survival on unemployment benefits. In 1869, the 'Charity Organisation Society', constituted by middle class entrepreneurs of Sheffield, was set up to offer ' systematic investigation of applicants for relief'. The statute claimed that 'only the responsible classes will be offered loans, advice and gifts'[72]. In 1886, the Local Government Board officially recognised that local authorities might have some responsibilities for providing temporary work and set up a 'Character Classification' of the paupers according to their different degrees of 'idleness'.

In 1905 the Unemployed Workers' Act established Distress Committees and opened a voluntary register of Unemployed. In Sheffield, the Committee was controlled by middle class councillors elected in each ward. At the time, Sheffield had five MPs in Parliament, all of whom were Tories except for the Attercliffe MP, John Wilson, the Quaker, liberal and philanthropist manager of 'Daniel Doncaster steel'. One characteristic feature of the 1905 Act, which places it still in the tradition of the 1834 Poor Law, was its admonition to every local authority to distinguish clearly between the 'deserving' and the 'undeserving' poor. The Sheffield Daily Independent of 2 June 1908 [73] reports a discussion in the Sheffield Distress Committee on a proposal by G. Alderman to divide the Sheffield unemployed into four classes. Among these four classes the only deserving poor were the 'workmen resident in Sheffield out of employment through no fault of their own. These men have to be householder men with families or single men having dependents on them'. The national legislation on poor relief was thus applied locally following two criteria. First, benefits were given to 'respectable' and 'creditworthy workmen' from a public body controlled by entrepreneurs. Second, these employees had to be stable residents and male heads of families. As a result, the distinction between 'deserving poor' and wage labourers was blurred, the household became the centre of the workingmen's respectability and the neighbourhood started to be considered as an 'estate' whose prices and property were at the core of local politics.

[72] LSL (Local Studies Library) LP (Local Pamphlet): 2(33)
[73] LSL, LP: 57(7)

Housing Policy

Indeed, the equation made by the law between 'deserving poor' and 'householders', transformed the estate market into an important arena of neighbourhood politics. Gaskell (1976: 190) has demonstrated that public debates related to working class housing developments dominated the municipal elections between 1850 and 1920.

Walker (1999) has demonstrated that in Sheffield only a few company owners controlled their employees' estates up until 1920. The author shows that in Attercliffe artisans and craftsmen (blacksmiths, cutlers) owned most of the back-to-back houses[74] and controlled the local building sector[75] and small-scale steel production. The fact that the Attercliffe artisans were subcontractors in the steel and building sector, that they organised their work through kinship networks and that they had stable residences, limited their dependence on industrial capital. Besides, the mixture of workshops and residences in the yards of the back-to-back houses of Attercliffe, also prevented the separation between the times and spaces of 'work', and the time and spaces of 'home', necessary for industrial discipline to succeed. In this section, I show how the debate on 'the relocation of the working class dwellings' modified the relationships between 'home' and 'work' during industrial capitalism and spatially fragmented the working class.

In 1890 the Local Government Board passed the Housing of the Working Class Act, which allowed it to undertake housing schemes for artisans as distinct from rebuilding in improvement areas. This meant that the local working class could be compulsorily relocated outside the slums. Since the 1840s, some eminent local doctors and Royal Commissioners had legitimated the Board's plan of working class relocation through surveys, statistics and enquiries concerning the health of the working classes. For instance, the report issued by the Department of the Medical Officer of Health in 1875, shows that 67% of the 5,549 back-to-back houses surveyed in Attercliffe had no ventilation; 3,716 had no back door, and 3,528, no back windows. In addition, one privy

[74] Back-to-back houses shared their backs with a parallel line of houses, from which they were separated by a wall only the thickness of a brick. Each row of houses faced a courtyard that had communal facilities – lavatories, wash-houses and 'miskins' for the rubbish.
[75] Walker (ibid: 240) shows that the steel artisans were often building contractors, seasonal builders or related to builders.

was shared by the 11.8 persons living in the three houses with the same yard, and an average of 2.1 persons lived in each bedroom[76]. The report lamented the fact that 'each domestic office, such as cooking, eating, washing and dying linen and nursing children (and sometimes trades) is carried out in the living room' (ibid: 10) and that in addition to human overcrowding, 112 horses, 60 cows, 211 pigs and 336 dogs were permanently accommodated in the houses' cellars.

Between 1850 and 1890, two medical theories were brought to the public attention of the small entrepreneurs and little mesters who attended the public lectures at the Mechanics Institute: the 'atmospheric theory' and 'phrenology'[77]. The 'atmospheric theory' claimed that the miasma, smokes, dust and smells deriving from garbage, open sewages and filth were contagious and that the spread of epidemics due to poor sanitary conditions could be prevented by increasing ventilation both in the workplace and in the working class slums[78]. Phrenology claimed that specific areas of the brain controlled people's emotions and intellectual faculties. This theory also claimed that environmental factors modified people's intellectual and emotional states. The two doctors that monopolised the scientific debate in Sheffield, Hall and Holland, applied these medical theories to the grinders of Attercliffe.

In his pamphlet *'The Grinders' Asthma'* (1840), Holland claims that the 'grinders' asthma' is caused by industrial pollution, that is, by the infiltration into the grinders' lungs of small particles of dust and dirt that ultimately affects their central nervous system and leads the journeymen to 'acts of intemperance and of rebellion towards their masters[79]'. The poisonous effect of the dust was not only related to the lack of ventilation in the workplace, but also to the dangerous mixture of 'work' and 'reproductive' spaces of the back-to-back houses of Attercliffe. In fact, the workers' small-scale tool production and their farming or rearing of pigs and sheep in the

[76] Nevertheless, according to the author the real number of occupants was supposedly higher than the statistics highlight, since 'several of the bedrooms are continuously occupied by persons who work at night and sleep in the day, and when vacated by these latter are re- occupied by ordinary day workers at night' (ibid: 10).
[77] Inkster (1973) claims that Sheffield had the biggest Phrenological Society after London. He also highlights the widespread diffusion of phreno-mesmerims and of the theory of electro-magnetism amongst the entrepreneurial middle classes in Sheffield. Phrenology was weekly discussed at the Mechanics Institute by the members of the Sheffield Campsall society and in relation to the factory production by Wood (1838) and by Holland (1960).
[78] This point is made by Nucleous (2000: 84– 89).
[79] Ibid: 32.

workshops hidden in the neighbourhood yards, created a poisonous mixture of animal and human smells and of cooking and industrial substances that increased the chances of contracting the lethal grinders' asthma.

In his *The Trades of Sheffield as Influencing life and health, more particularly of file cutters and grinders* (1848), Hall claims that the primary cause of the grinders' asthma is the lack of working discipline implicit in their organisation of labour. According to the author:

> 'many of local trades can be carried out with small amount of capital and hence the very large number of what are called 'little mesters'. They often work at home and their wages are also much higher than in other towns and these circumstances have an important bearing on the subject under consideration. In fact, piecework encourages fits and starts of very hard work, and then entire days of idleness and drunkenness. These workers are their own masters and work long hours in their own trades and constantly inhale particles of steel...They often take dinner in the workshop where the files are cut. I saw a file cutter eating his dinner with unwashed hands, and dipping his fingers blackened and covered with fine lead dust into a paper which contained the salt for seasoning beef. Lead affects the peripheral nerves of the body and afterwards the nervous centres. As a result, the cutlers have a peculiar dirty-white and sallow appearance, the dropped wrist is common and the blue line around the teeth arising from the sulphuret of lead.'

Hall suggests that the grinders' asthma could be prevented by abolishing the Saint Days, ('the first day of the week spent in drunkenness and idleness'), by imposing a fixed number of hours for each working day and by 'washing hands, arms and face many times a day, brushing the hair and changing clothes', since the lead entered the system through the skin. In short, Hall claimed that the grinders' asthma was due to the circulation of grinding dust, through the atmosphere, into the grinders' homes and, through their skin, into their bodies. More importantly, he suggested that the pollution deriving from the mixing of industrial wastes and reproductive substances (cooking salt with grinding lead, suet and beeswax to 'dress' the grinding wheel and suet used for food) was linked to the grinders' peculiar organisation of labour and to their mixing of the spaces of 'home' with the spaces of 'work'.

Indeed, Holland seems quite clear that the objective of working class relocation was not only to prevent working class epidemics, but also its mass political organisation. In fact, in his *Philosophy of Animated Nature* (1860), Holland suggests that nervous energy is transferred through the atmosphere and that human emotions and ideas are contagious.

Consequently, the author stresses that overcrowding, both at home and in the workshop, was politically dangerous, as it created 'solid states of nervous energy shared by a vast mass of workingmen'. Thus, the Board[80] followed the recommendations of the two physicians and attempted to relocate the artisans into cleaner and bigger working class suburbs and to concentrate small-scale producers into bigger shopfloors where labour could be disciplined and industrial dust could be produced and collected 'on a greater scale'[81]. Not all the artisans subscribed to this medical discourse. For instance the *Report on the Trades of Sheffield* (1843) laments that 'the grinders view any precaution to prolongue their life with jealousy and as a means to increase their supply of labour and lower their wages'; Holland (1869) laments the fact that 'generally, the grinders refuse to wear handkerchief to protect nose and mouth' and the Sheffield Independent[82] reports the incidents taking place at the 'Butcher's Wheel', where the workers demolished the fans recently placed on the newly built shopfloor of Mr. Butcher.

The heated municipal debate on the 'development of suburban areas' taking place at the Sheffield Town Hall in 1899 reflects the division internal to the Housing of the Working Classes Sub-committee. On the one hand, the conservatives and the capitalists favoured the housing policy of 'concentration' of the working classes in high density 'barrack-like blocks of dwellings'[83] to be built in the Sheffield East End. This position was motivated by two factors. First, high-density dwellings ensured a higher return on capital. Second, the physical proximity of 'company houses' to the factories increased the social control of the capitalists over their employees and at the same time it prevented 'the wild Irishmen to occupy the Western countryside where the respectable middle classes live'[84]. The housing policies of the Independent Labour Party were mainly inspired by the utopian ideas of the movement for the workingmen garden suburbs. The movement's revolutionary view of society envisaged the re-establishment of pre-industrial forms of production and social life[85]. During the debate, Mr. Litchfield of the Garden City Society claimed that 'the Sheffield workingman prefers to have a cottage with a small garden plot, where the children could learn to love the flowers and

[80] Ibid: 189.
[81] Holland, 1860:23.
[82] Sheffield Independent, June 1858,Sheffield Local Study Library.
[83] 'Development of suburban areas', 189.
[84] Ibid: 190.
[85] Gaskell, ibid: 195.

enjoy the pure fresh air, rather than crowding in the unhealthy working class slums'[86]. The ILP's housing policy of dispersing the working classes into suburban areas relied also on trust in the medical theories of the time that claimed that urban concentration fostered working class epidemics and on the same belief shared by the Lord Mayor that 'suburban areas show a lower death rate and a higher birth rate than the slums'. Here it is important to stress that the most progressive political parties of the Sub-committee subscribed to the medical discourse that saw working class 'dispersion' and relocation as a means of its moral and hygienic emancipation.

In 1908, 230 working class dwellings were built on 60 acres on the Wincobank estate, a mile from Attercliffe. Due to the fact that the unskilled artisans could not afford to pay the weekly rent of 5/-[87], the Wincobank scheme attracted mainly affluent artisans, and created a spatial division between these latter and the working classes of Attercliffe. In addition to the council estates built for the respectable artisans, high-density company houses were built for the steel labourers along Brightside and Burngreave, in proximity to the factory premises. The difference between these labourers' dwellings and the back-to-back houses owned by the artisans was, according to Boughton (1985: 20), visually striking. In fact, the author suggests that 'the series of new houses built in 1890 broke with the old inward-looking courts and alleys characteristic of Attercliffe and were substituted with open-ended straight streets often grid-iron in layout'.

Thus, at the end of the 19th century the urban spaces of Attercliffe split into three areas. The first consisted of a dense web of back-to-back houses owned and inhabited by networks of extended families of steel artisans. These houses were hidden from the glance of outsiders between the river Don and Attercliffe Road. The second extended horizontally into the Lower Don valley and consisted of the newly built dwellings for the migrant labourers, spatially grouped into regional areas, owned by local speculators or entrepreneurs and architecturally open to the glance of the over-looker and managers. The third materialised in the quiet garden suburbs between Attercliffe and the city centre, where skilled artisans and middle management coexisted in 'small rows and clusters of semi-detached houses separated by wide streets, gardens and open spaces'

[86] 'Development of suburban areas. Reporting on the proceedings of a representation conference' 1905. LP. 75(2): 180.
[87] The average wage of an unskilled steelworker was 30/- per week (Pollard, 1963).

(Dunn, 1976: 106). Thus the local community split into a class of home owners and a class of renters, the former economically independent from the middle classes and socially self-contained, the latter economically dependent and upwardly socially mobile.

In conclusion, the housing policy of the Board accommodated the speculative interests of the financial capitalists, reinforced industrial discipline by separating the 'homes' of the proletarians and of the aristocracy of labour from their 'work', and satisfied the dreams of modernisation of the Labour Party and of the steel trade unions. More importantly, the medical discourse that accompanied the policy of the Board, transformed the workers' perception of their own bodies and social interactions, towards an increasing 'individualisation' and painted 'separation' as a desirable social and medical state.

Social legislation and household structures

I have suggested that the industrialists controlled most of the public bodies for the distribution of the relief against unemployment and that this was given on the basis of each workman's respectability. Besides, I have claimed that the notion of respectability, on the interpretation of the Distress Committee, was related to the status of 'householder man with family' and that in this way, the family became the fundamental social unit to which public morality and benefits were to be addressed. In what follows, I show that the residential fragmentation of the steel workforce was coupled with its fragmentation in terms of household structures and I link these different household structures to the differentiated economic strategies of the Attercliffe working classes.

In his interesting contribution, Robert Gray (1987) highlights the different 'languages' through which industrial paternalism inspired factory reforms in England during the period I am investigating. The author claims that patriarchal values pervaded the factory reforms between 1830 and 1860 and particularly the reforms aimed at reducing women and children's labour. Interestingly, not only was child labour said to entail deficiency of schooling and moral education, but it also prevented girls from being socialised for marriage and future motherhood. From this point of view, according to Gray, 'the regulation of child labour would enable girls to grow up into domesticated wives and mothers' (ibid: 151). Gray suggests that the creation of the nuclear family allowed the

synchronising of the supply of labour to the business cycle so that women and children's labour should be cut during economic slumps. This suggestion well applies to the case of Sheffield where the legislation against women's and child labour was cyclically enforced during the years of economic depression[88].

Similarly, according to Boughton (ibid: 280), in Attercliffe the creation of the nuclear family – centred on the private realm of the home and on its feminine virtues – broke the kinship ties of the neighbourhood by emphasising the individual value of the male breadwinner and head of the family. Nevertheless, I suggest that the industrialists had an additional reason to link the notion of respectability to the nuclear family, that is, to curb the black economy of the cutlery and tool workshops of Attercliffe. In fact, I suggest that the same artisans who controlled the shopfloor of the steel firms through kinship ties and the informal hierarchy linked to their professional families, also controlled the cutlery and tool workshops of Attercliffe[89]. These workshops were embedded in the back-to-back houses of Attercliffe, mixed in the local 'household' economy, and performed by a network of women belonging to the same extended families[90]. Thus, the state channelling of poor relief towards nuclear families, coupled with social legislation that stressed the immorality of women and children's labour, de facto, weakened not only the patriarchal status of the artisans, but also the informal economy – tool and cutlery making – of the neighbourhood that ultimately relied on that status.

The state campaign against female and child labour was also reinforced by the medical condemnation of the hygienic conditions in which extended families lived due to their involvement in the 'small system of manufacture'. According to the enquiries of Holland (1860) and Hall (1865) the 'small system of manufacture' of the Attercliffe artisans was unhealthy due to its peculiar mixture of 'manly' and female activities within the home, of productive and reproductive activities, of outworkers and family members in the same household and of young apprentices and elder artisans in same local public house.

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[88] During the years 1830, 1870, 1920.
[89] This suggestion is reinforced by Walker's stress on the nuclear structure of the families involved in the 'light trades' (tool production) and of the nuclear structure of the families involved in the heavy trades (steel production) in Attercliffe (ibid: 240).
[90] This suggestion is confirmed by the reading of Leader (1875).

In his *'Enquiry in the Manufacture of Sheffield'* (1860), G. Holland claims that 'the vice among the Sheffield children, especially between childhood and manhood, is aggravated by the system of letting out children to individual workmen, and rending them independent from parental control. Apprenticeship removes moral subordination, gives independence without means of self-government and makes children their own masters at the age of 12' (ibid: 20). Besides, 'the practice of allowing them to work by the piece, paying them for extra workforce them to work for long hours and to *imbibe* continued dust and grime. The habits of putting them to board and lodge in houses where no control is exercised over them, induce them to *imbibe* errors agreeable to the passions'. Holland's opinion is confirmed by Mr. Raynor, Superintendent of the Police, who claimed that 'the system of apprenticeship causes an uncontrolled state of the children, removed by their parents after the work is done. The moral of the children is not so bad in Manchester and Leeds, because the factory system prevents them from running wild in the same manner'[91]. Besides, according to Holland, small-scale production 'encouraged prostitution amongst young married women and their employment in the lower operations of the trade' (packing articles or dusting, polishing and cleaning the finished products). Holland also claims that working mothers of artisans' families prevented their children from going to Sunday Schools and allowed them to go to bed unwashed and wearing their working clothes. This medical discourse condemned small-scale production because it relied on extended families and working groups that were unhygienic *because* mothers were also workers, children were also independent adults and apprentices were also part of the family. My point is that the same medical discourse that encouraged working class families to move outside the Attercliffe slums also encouraged the fission of the conjugal couple from their extended families and reinforced the role of breadwinner of the male head of the family by exposing the unhealthy condition of women and children's labour.

Nevertheless, the social reforms of women and children's labour and the rules of poor relief did not transform the household structure of all the Attercliffe working classes, but rather split the working class into three household structures reflecting different economic strategies. The respectable artisans who had migrated to the working class

[91] LSL, LP 2(44).

suburbs subscribed to the ideology of the nuclear family and their wives increasingly withdrew into the domestic domain, the family being able to flourish on the stable employment and high wages of the husbands and on their social connections in the neighbourhood. The labourers either lived in the company houses or rented dwellings on the periphery of Attercliffe. Being highly dependent on the volatile wages and economic cycles of early industrialisation, they could not afford to set up a stable family and in fact were often single men without families[92] . They lived only temporarily in Attercliffe and rejoined their families in the neighbouring villages seasonally, either during the slumps of the steel industry or at the peak of the farming season[93]. These 'unskilled workingmen' – according to Hall (1865: 24) – enjoyed 'the prostitution and promiscuity characteristic of the public houses'.

Finally, as Walker (1999) has demonstrated, the ancient families of tool and steel artisans resident in the Attercliffe slums consisted of extended families – both horizontally and vertically – whose residential and occupational stability in the slums lasted throughout the 19th century and until the 1920s [94] (ibid: 234). Through an in-depth analysis of the census enumerators of five streets of Attercliffe during the period between 1841 and 1891, Walker challenges Pollard's thesis of the socially dislocating effects of large-scale immigration and suggests the significance of the family as a social support unit in Attercliffe. Besides, Walker's analysis also suggests that the family organisation in Attercliffe during early capitalism sharply contrasts with Hajnal's (1983) typical 'Western' households and rather consisted of flexible aggregations of nuclear families within the same yards, of extended families within the same streets and of working groups inside the same families. Walker's paper also shows the correspondence between extended families and light trades (tool industry) and between nuclear families and heavy ones (steel industry), and the historical process of separation of these two family structures during early industrialisation.

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[92] Pollard (1959).
[93] Hey (1998).
[94] Gill Booth (1988), in her book on the Sheffield 'Buffer Girls', claims that still in the 1920s many Sheffield families had a workshop in the yard where women and children did outwork and that cutlery production was embedded in family lives and activities. In fact, the author claims that small terraced houses were mixed with the workshops of outworkers so that young women lived close to where they worked and could often go home for dinner or fetch their children from school to take them to their parents' homes.

The Attercliffe artisans did not subscribe to the ideology of the nuclear family due to their increasingly weak position in the context of factory production. In fact, the increasing mechanisation of the shopfloors progressively substituted skilled labour with unskilled workers, and the Attercliffe artisans who were expelled from the shopfloor at the end of the 19th century progressively had to rely on the informal economic network of tool and cutlery production embedded in the social texture and in the dense architecture of the neighbourhood for their survival. Thus, in Attercliffe, during early industrialisation[95] industrial capitalism did not imply the disappearance of household production and enforce the separation between the male and productive space of work and the female reproductive domestic spaces. Rather, in Attercliffe the mass production of steel inside the integrated capitalist firms coexisted with the production of cutlery and tools performed by women and children inside the local households and small workshops. From this point of view, the 'patriarchal industrialism' of the entrepreneurs was complemented by the 'patriarchal ideology' (M. Burawoy, 1985) of the workers, this latter intended as a household strategy aimed at diversifying the employee's economy and minimising the employer's control over the extended family's skills.

Thus, the local working classes adapted the morphology of their households to the changing power relations on the shopfloor and to the different policies of the state and the capitalists in dealing with different sections of the workforce. Skilled and respectable artisans enjoyed higher wages[96] and stable employment, and they could therefore afford to live in the more expensive working class suburbs and appreciate the domesticity of their non-working wives. The unskilled labourers, whose increasing importance in the standardised production process of the major steel companies was counterbalanced by the short-term nature of their employment, adopted a more flexible strategy of shifting between their lonely existence in the dense dwellings of Brightside and Burngreave and rejoining their families during times of economic depression. Besides, they increasingly sought marital alliances with the more skilled and wealthy artisans of the steel industry[97]. Finally, the artisans living in the Attercliffe slums, whose skills and financial situation inside the formal economy of steel were progressively declining due to mechanisation, retained their control over the informal economy of the

[95] For a critical analysis of European early industrialisation, see L. R. Berlanstein (1993).
[96] 50/- per week, according to Gaskell (ibid: 190).
[97] Walker, ibid: 237.

neighbourhood and their patriarchal grip over the extended working group made up of kin, children, wives and young apprentices.

My historical reconstruction of working class families during early capitalism highlights the importance of studying household patterns in a long-term temporal framework and in their structural context. In fact, my historical evidence disconfirms Laslett's claim of the intrinsic 'nuclear' nature of English kinship since pre-industrial times and shows that patterns of fission and re-aggregation of the conjugal couple from their kin are the result of state policies and structural economic conditions. More precisely, nuclear families form when economic resources are abundant and extended ones when scarcity forces the individual members of the family to pool their resources together. Holland's (1861) longitudinal statistics on working class dwellings in Attercliffe between 1830 and 1860 shows that working class homes were empty in time of economic decline and populated by nuclear families in times of economic boom. This evidence seems to confirm my claim that migrations within and between households in Attercliffe followed the economic cycles of the steel industry and public welfare and housing policies.

Politics in Attercliffe

Even in terms of political activism, trade unions and political parties reflected the fragmentation of the working class that I have already highlighted. The small-scale manufacturers and skilled artisans of Liberal beliefs founded the Sheffield Federated Trades Council, a confederation of light trades attached to the Liberal Party in the Sheffield Council that had an independent voice on matters of labour, but on political matters was compelled to vote with the Liberals. On the other hand, the workers in the steel sector founded the Sheffield Trade and Labour Council politically affiliated with the Independent Labour Party (at this time called Labour Representation) and the British Socialist Party.

The two main steel unions, the ASE and the ISTC, branched out from this latter trade confederation. These unions soon fell apart, mirroring the division that was increasingly growing inside the Independent Labour Party between its more radical – communist and social democrat – members, and those of more liberal inclinations. Since their early

formation, the craft consciousness and communist beliefs of the ASE clashed with the wage bargaining policy and the labour ideals of working class improvement of the ISTC. Apart from these two unions associated to the ILP, tool- makers and cutlers founded their independent unions (NAUL, SAUFT and CU) characterised by a high degree of sectionalism and a strong affiliation with the Liberal party and, in some instances, with the Tory Party.

After a big slump in 1870s several socialist societies were founded in Sheffield. In 1884 the 'Workingmen's Radical Association' challenged the authority of the 'Attercliffe Liberal Club', and in 1893 an anti-capitalist, anti-liberal and anti-Tory branch of the Independent Labour Party was formed. In Attercliffe, the broader contradictions and conflicts internal to the ILP – between communists and Labour – and the conflict between the more conservative cutlers and the more progressive steelworkers were magnified and complicated by the fragmentation of the local working class.

In fact, the 'proletarian community' of Brightside and Burngreave, according to Boughton (ibid: 270), shared the Labour Party's and the ISTC' s political objectives of bettering the working condition, levels of pay and living standards of the steel labourers and their policy of non-confrontation with the capitalists. This community strongly contrasted with the 'most unskilled, unhealthy, low paid and conservative type of working class living in the slums and back-to-back houses in the central wards of Sheffield'. The latter – mainly of tool makers, cutlers or blacksmiths, rollers and forgers who were being progressively expelled from the steel factories – was oriented towards the past, they were characteristically racist, and – like the Conservative Party – opposed to compulsory education and public investments in housing and welfare. The skilled engineers, mainly members of the Communist Party and of the AEU, opposed the ISTC policy of wage bargaining and their collaborationism and shared the craft consciousness of the artisans, whilst strongly opposing their long-term vision of the evolution of society. In fact, artisans looked forward to the restoration of the past, whereas engineers looked forward to its dissolution into the socialist future.

In reality, according to old Fred – honorary member of both the 'Attercliffe Liberal Club' and the 'Attercliffe Conservative Club', located only a few hundred metres from each other in Attercliffe Road – families often held conflicting political views.

The political fragmentation of the community was reflected in the fact that the local workingmen's clubs attracted members from across the political spectrum: young and literate communist engineers from higher working class backgrounds; second-generation steelworkers of Labour belief, like the father of Rob[98]; and a vast core of old residents – like Fred's father – employed in declining craft occupations, who remained strongly conservative. Interestingly, these three generations of steelworkers, and their political beliefs, reflect the three categories of steelworkers (engineers, labourers and artisans) that coexisted in the neighbourhood and their different degrees of control over the process of production. In fact, political consciousness and shopfloor militancy were higher among the engineers who controlled the production process and enjoyed higher wages and better working conditions than among the rest of the manual workforce in the steel industry. The labourers, who lacked control over the production process, focused their political activities on wage bargaining and working conditions and therefore restricted the scope of their political actions at the level of the shopfloor. Finally, the artisans who had been expelled from factory production refused altogether the language of formal politics and of working class emancipation and built political loyalties at the level of the neighbourhood. Here I want to stress the paradox that political consciousness was greater among the workers with more privileged economic and social background. The three categories of workers also moved in different political arenas. In fact, engineers and labourers thought of politics as taking place at the level of the nation or of the shopfloor, whereas artisans conceived of politics as embedded in the social and economic texture of the neighbourhood.

'Free time'

According to Reid (1976), leisure was one of the main arenas for the reproduction of the middle class ethic of respectability. In fact in Sheffield, the middle classes considered leisure activities, as opposed to working activities, as an instrument of working class self-improvement, independence and ultimately, emancipation. The main reason for the middle classes to promote the respectability of leisure activities was to reinforce industrial discipline. In Sheffield 'leisure time' emerged from two historical developments: the capitalist appropriation and commodification of natural resources and

[98] A worker of Morris.

the development of middle class clubs and associations. The first development limited the artisans' farming and fishing activities with which they complemented their industrial labour, and therefore increased their dependence on industrial wages. The emergence of respectable leisure pursuits prevented dangerous concentration of the working classes in the neighbourhood's pubs or betting houses on Sundays, and reduced absenteeism on Monday.

One example of middle class conversion of subsistence activities into leisure activities can be found in the transformation of farming into 'gardening'. Until the 1920s the presence of plots of cultivated land in Attercliffe is well documented[99]. In the 19th century, cutlery workshops and small allotments were mixed together so that artisans would integrate cutlery production and agricultural production. The interdependence between tool industry and agriculture and the overlap between the spaces of the workshops and the plots of land is documented in several articles of the time[100]. Rowntree' s study of budgets in 1913 reveals that allotments and gardens could provide a quarter of the food consumed by families and therefore 'gardening' was a fundamental part of the workers' subsistence economy. This fact was well understood by the workers who, in 1850, created the first 'Allotment Society', a consortium of cutlery trades that attempted to integrate industrial production with industrial agriculture on a big scale. This move, supported by agrarian socialists like Carpenter and the Social Democratic radical members of the Independent Labour Party, was strongly opposed by the industrialists.

In 1836 the latter had founded the 'Sheffield Horticultural Society' and during the 1860s several 'garden societies' and Horticultural Clubs between Attercliffe Road and Darnall. During the year 1847 the 'Sheffield Independent' published a series of articles regarding garden societies. In one of these, the author claims that 'the purpose of the Clubs is not profit but an agreeable and healthful recreation' and that 'these gardens exert on artisans a beneficial moral influence. In fact, they keep them from the public houses and from evil company (and) these artisans are superiors in character to those

[99] For example, Odgen (1994).
[100] For instance in 1848 the 'Sheffield Independent' writes 'in some instances they have their workshop for file cutting and blade forging upon the very spot so that they are always at hand to perform any gardening operation which might be necessary. In some gardens artisans constructed a small house where they reside..'

engaged in similar branch of the cutlery trades'. The articles also condemn the fact that small-scale producers complemented their industrial production by cultivating their allotments and gardens located *near* their workshops. The 'Small Holdings and Allotment Act' (1908) broke this proximity between the workshops and 'the fields', by allowing the local authorities to purchase farming land and to move working class allotments to the north-eastern edge of Attercliffe.

In 1898 a big debate regarding the admission of the working classes into the Horticultural Society divided the middle classes. Industrialists claimed that the working class lacked the 'spirituality' to appreciate the subtle colours and the 'aesthetics' of the exotic plants planted in the garden. Besides, they feared that the admission of the working classes into the society would have the effect of collapsing the value of the society's shares. Middle class liberals believed that manual workers could improve spiritually and that the Society needed the money of the working classes to build a new 'Imperial Pavillon'. Around 1910 gardening was introduced in the school curriculum whose focus was not on root crops such as potatoes and carrots but on the cultivation of lettuces, peas and runner beans. In 1912 Daniel Doncaster created allotments for workers within the firm's premises and, 'against the culture of the pub – based on pigeon shooting, poaching, rabbit coursing, dog fighting', organised monthly company horticultural shows[101].

Thus, agriculture was transformed from a subsistence activity into a leisure activity and workers were divided between the spaces of the allotments for the poor workers and the gardens for the respectable ones. As a consequence, a new market was created – on the one hand consisting of potatoes, carrots and subsistence food and on the other hand, of Botanic books, smaller agricultural tools, rare seeds and tickets for the Horticultural Society. On the day when the Socialist Club was opened in Sheffield in February 1887 by Edward Carpenter, Prince Kropotkin lectured[102] on the dream of a collectivist rural economy that would counteract the industrial interests of the middle classes and of the Labour Party. But, once this view of agriculture as 'complementary' to industry faded away, agriculture was pushed away into the countryside or transformed into an urban pastime. Gardening transformed nature into 'something' external to humanity, and

[101] Reported in the 'Daniel Doncaster' company magazine 'Forging Ahead', 1912. Sheffield LSL.
[102] Sheffield Independent, Feb 1888.

opposed to 'industry', something to be respected and observed but not used for productive activities by the working classes. It also commodified and miniaturised nature in the forms of small plots of land, encircled fishing ponds and small exotic seeds.

The development of 'fishing' as a leisure activity is another clear case in point. In fact, since the foundation of the Sheffield Waterworks Company in 1830, the industrialists progressively alienated the right to fish from the working class by enforcing a rigid anti-poaching legislation and by allowing fishing only along the stretches of the river bank purchased by fishing clubs. These clubs, like the Attercliffe Walthonian Fishing club, mixed middle class entrepreneurs and local supposedly well off artisans[103] and propagated a middle class notion of respectability through strict rules of fishing behaviour. For instance, the rules of the Walthonian Club that fish were not to be killed but thrown into the water 'with respect', and that the fishermen's main duty was to monitor the rivers' pollution made clear that fishing was not a consumption but a leisure activity that required a 'non-utilitarian' attitude and respect both towards fish and towards nature.

Also with regard to leisure time, the Attercliffe working class was divided into three leisure patterns. The respectable artisans practised fishing, gardening and even attended art exhibitions at the Ruskin Gallery and were co-opted in patterns of conspicuous consumption, following the styles of consumption set by the entrepreneurial middle class. The steel proletarians practiced their leisure increasingly inside the factory premises, where allotments, canteens and organised sport competitions or fishing expeditions attracted them even during the weekends. After 1889, steel proletarians increasingly gathered in big numbers in the premises of the Bramhall Lane football club, where choirs of support for Sheffield Wednesday sometimes mixed with workers' songs[104]. Finally, the artisans of the slums openly refused the middle class or radical socialist ideology of improvement through leisure time and kept on treating nature as a useful resource, rather than as a space for contemplation or spiritual improvement, farming in their allotments and fishing along the river Don and Rivelin for subsistence.

[103] The street where the members of the club lived – indicated in the Minutes of the Club- were typically inhabited by small manufacturers.
[104] Connole, 1961: 103.

Industrial concentration and the production of the industrial proletariat

In this section, I suggest that in times of industrial concentration – that is between 1890s and 1920s – public housing, health and education policies shaped the imagination, urban spaces and leisure practices of the residents of Attercliffe towards a greater homogenisation and polarisation between 'artisans' and 'proletarians'.

Welfare Policy

In 1911, the Liberal Government passed the Unemployment Insurance Act whose main feature was to set a limit to the number of benefit weeks available and therefore to create a distinction between the casual and the long-term unemployed. The former – usually the 'core' of steelworkers and iron founders whose redundancy was linked to the economic cycle – received state benefits, whereas the latter – the 'undeserving poor' – were treated according to the Poor Law and dealt with locally by the Board of Guardians. The Guardians could decide either to give outdoor relief or to offer accommodation in the workhouse. Because the law made it illegal for the Board of Guardians to give outdoor relief to able-bodied persons except in return for tasks, the unemployed were now employed as public contractors in the harshest jobs (i.e. construction of new roads or work in the local Sewage Works). This situation was different from the poor relief system described earlier in that the Board of Guardians – composed of local entrepreneurs – was now legally 'compelled' to give task work to the unemployed instead of money or gifts in kind. In practical terms, the law transformed 'the poor' into public contractors whose poor relief was given in the form of quasi-wages. Besides, under this situation, each ward was economically responsible for its poor relief funds and therefore the employed workers were de facto compelled to pay to the Guardians a sum for the subsistence of the local long-term unemployed.

In Attercliffe, the new distinction between casual and permanent unemployed magnified the gulf that was developing between the skilled and the unskilled trades. In fact, the technology of mass production of steel meant that the skilled artisans, once out of work, became long-term unemployed, whereas the steel labourers were out of work according to the fluctuation of the steel demand. Thus, this legal framework split the working class into two kinds of unemployed. On one level, unemployed steel labourers received their

benefits from the state in the form of National Insurance. At the lower level, the artisans negotiated their poor relief with the Board of Guardians, this latter paying the 'dole' on a discretionary basis. Thus in Attercliffe artisans increased their dependence on the steel entrepreneurs who, as members of the Board of the Guardians, now acted as public contractors rather than as private employers. On the other hand, the steel labourers – who now received their benefit from the state –were progressively detached both from the control of the local entrepreneurs and from the informal economy and forms of subsistence tightly linked to the old working class community.

This separation between the interests of the skilled artisans and those of the proletarians was mediated by the local Communist party, and by the NUWM[105] (National Unemployment Workers Movement), founded by George Fletcher, Leonard Doyle and Billy Woodhead (Teddy's father) in Attercliffe in November 1920. Fletcher and Woodhead, both 'Cliff lads', represent the two different souls of the Attercliffe unemployment movement in Sheffield.

George Fletcher, born in Retford in 1870, worked as a baker's apprentice and farmer in Retford before he came to Sheffield to work as apprentice at the Simmerton bakery on the Wicker. Already in 1890, he co-founded the Sheffield branch of the Bakers' Union and the Sheffield Socialist Society and in 1902, he formed the Sheffield Branch of the Democratic Federation in Brightside, a radical socialist branch of the Independent Labour Party. George's political and professional activities often mixed and he often combined his door-to-door distribution of loaves in the streets of Attercliffe with the sale of pamphlets of Karl Marx, Robert Blatchford or Peter Kropotkin for a penny and twopence. George's bakery soon became a political meeting place attracting not only ordinary workingmen but also wealthy radicals and utopian socialists such as the actress Daisy Halling, the Countess of Warwick and Arthur Neal, a lawyer who defended George several times in court, and a few members of the Church Socialist League, a Christian socialist group which founded the Clarion Choir and the Clarion Rambling Club for the spiritual emancipation of the working classes.

[105] The history of the NUWM resembles the history of the *yoseba* (day Laborers) movement in Japan, described by Tom Gill (2001).

In 1915 George bought the 'Artofex' dough mixing machine which could bake the bread that the local families brought to the shop in small tins on a continuous scale and he co-founded the Attercliffe Independent Labour Party whose political programme was to 'establish a Socialist Soviet Britain'[106]. In 1921 he became national committee member of the Communist Party. His affiliation both to the Communist and to the Labour party and his double identity of capitalist and member of the Trades Council and chairman of the Bakers Union. His double political affiliation to the Communist Party and the Labour Party, provided George with good connections both with the communist AEU and the Labour ISTC steel trade unions whose thousands of members resident in Attercliffe consumed Fletcher bread in the company canteens and in their home.

In 1922 Fletcher bought two 'model-T' Fords for his bread deliveries, an automatic bread slicing machine and a travelling oven from America, and he started to mass produce white bread. His evening special offers of stale bread, together with the special offer of 'slink' meat[107] at the local butcher, were the two major shopping events in the Attercliffe community. In the same year, he was elected member of the Board of Guardians and endorsed the Ministry of Health's position of curbing the relief expenditure for Attercliffe, in exchange – according to some of the local people – for the state control of the fluctuations in the price of wheat. In November 1922, George was delegate for the British Communist Party to the 4th International Congress in Moscow, where he met Lenin and sat on the Famine Commission with the Webbs. The following year, he met the Pope in Rome. He returned to Sheffield and with the help of his son young George, Fletcher entirely mechanised his shopfloor making several workers redundant and transformed the business into a Limited Company.

The life of Fletcher, whose family still controls the multinational business, well exemplifies some characteristics of the political life of Attercliffe at the turn of the century. First, that the affiliation to the Communist Party ensured upward mobility to working class people due to the strong component of wealthy and well connected middle class or aristocratic members – Social Democrats, Christians, radical socialists – who shared its revolutionary ideals. Second, it shows the complex relationship between the Communist Party and the AEEU on the one hand, and the Labour Party and the

[106] Minutes of Attercliffe Branch of ILP (Nov.1915).
[107] Meat of animals that had died of disease or accident.

ISTC on the other hand. In fact, if the former often relied on the power of mass organisation of the latter, it also strongly disagreed with its short-term bargaining attitude and its lack of a long-term, revolutionary vision of society. Third, the story of Fletcher shows the intimate link between the Communist Party and the NUWM, and between this latter and the illegal gangs of Attercliffe. In fact, the Attercliffe branch of the Communist Party often used the know-how of the local gangs in order to train the Civic Army in the art of war and sabotage that would lead the Soviet revolution in Sheffield[108]. Finally, it shows that the Attercliffe branch of the Communist Party mixed literate and educated wage workers with local, often unemployed, artisans, whose interests and political visions often collided.

In fact, the other soul of the Attercliffe unemployment movement consisted of extreme left communists, whose political militancy relied on a local web of illicit revenues and informal loyalties through which the old working class community – which unlike the engineers were part of the 'undeserving poor' – could escape the control of the entrepreneurs and of the Board of the Guardians. According to Bill who regularly met Woodhouse in the Communist Party branch, Teddy's father was heavily involved in illegal trades – betting, dog-fighting and local rackets – through which he financed the meetings and activities of the more extreme members of the unemployment movement. Teddy's father was expelled from the Communist Party when the police discovered the vast amount of explosive, guns and steel bars that he had hidden in his brother-in-law's pub, the Traveller, locally renowned as being the centre of Attercliffe political and illegal life[109].

On 17 March 1923, a large meeting of the unemployed took place at the Corn Exchange, which passed the following resolution: 'we urge the unemployed to refrain from accepting the Guardians' offer of task work. We demand that task work must be paid at trade union rates of wages'[110]. This attempt of the unemployed movement and of the Communist Party to question the logic of capitalism by creating a united front of – unemployed and employed – workers and by equalising the poor relief to the wages of

[108] Minutes of Attercliffe Branch of the Communist Party.
[109] This is still the case today.
[110] From the 'Sheffield Independent', 1923. Sheffield LSL.

the working people, was opposed by the Labour Party and by the ISTC whose interest was to create a solid and united (active) workforce.

In fact, by 1924, the Labour Government introduced the so called 'Not Genuinely Seeking Work' clause, whose effect was to create a permanent Commission whose task was to enquire into the willingness of the unemployed to seek work. The effect of this law was that claims were disqualified in large numbers, especially the claims of the women workers. In Sheffield, unemployed women were either forced back into domestic service or, more drastically, forced to migrate to Australia and Canada. In 1930 the Labour Government appointed a Royal Commission on Unemployment to tackle the problem – until then unknown – of 'chronic unemployment'. As a result of the Commission's report, the government imposed the family means test, thus immediately removing more than 30,000 claimants. The means test imposed on every claimant the responsibility to give full details of the income of every member of his or her family, under threat of prosecution. The total weekly income of the family was worked out and the amount by which it was greater than the Poor Relief was then deducted from the claimants' benefit. The effect of the test was twofold. First, it imposed an unprecedented surveillance and intrusion on the part of the newly formed UAB (Unemployment Assistance Board) into the Attercliffe households. Second, by deducting from the unemployment benefits of the householder, the joint income of all the members 'dependent on him', it effectively destroyed the extended families of Attercliffe and their fragile economic equilibrium based on a pool of heterogeneous, and not always legal, incomes. Third, because the Family Test also increased the amount of poor relief to be paid by the local wards, it split Attercliffe into a category of workers who paid unemployed taxes and a category of workers who received from them unemployment benefits.

As a consequence of the Means Test legislation, policemen, usually – like Bill's grandfather – of local working class background, patrolled the streets of Attercliffe enquiring about the families' sources of income and the willingness to work of the local unemployed. According to Fred 'the good times when you could walk in the street unmolested by the police' had gone, and the doors, yards and curtains of the back-to-back houses of Attercliffe progressively closed to isolate them from the curious glance of policemen and neighbours. Fred remembers several young boys, friends of his, who

became homeless because they couldn't afford to share their incomes with their parents and the daily begging of young children outside the factory gates. According to Fred, during this period solidarity within the neighbourhood was considered as a form of collusion against the state. Fred's bitter memories can be explained by the fact that his father, like most of the people of Attercliffe, probably worked and at the same time received poor relief. Nevertheless, the state policy of giving poor relief only to people 'genuinely seeking a job' had the effect of compelling the Attercliffe 'poor' to accept the unskilled jobs in the local steel factories. Besides, the policy of giving poor relief to independent poor relief claimants fragmented the local extended families.

The deskilling taking place in the local steel factories due to technological changes was reinforced by the ISTC policy of equalising industrial wages. In fact, the ISTC was pulling together a variety of differentiated trades into the same category of 'wage earner' and equalising the economic interests, working habits and monetary standards of the artisans with those of the labourers[111]. The ISTC and AEEU strongly opposed the sectionalist and craft-oriented policy of the cutlers' and tool makers' trade unions[112], their apprenticeship system that prevented young boys from freely entering in the labour market, their control over some fundamental phases of the steel production process and of the piecework system, and their willingness to work for the steel capitalists in times of strikes. The rules of the early steel unions reflect the strong Wesleyan and Quaker background of their leaders – for instance that in each trade the wage level should be adjusted to the piecework rates of the 'lowest category' of workers – and the strong conviction that the collective value of the workers was socially bigger than the sum of their individual economic values, this latter a concept completely unknown at the time when John Stuart Mill dominated the perception of the local entrepreneurs of the value of labour[113]. This notion of the equality of the value of labour of each working man matched with the deskilling associated with mechanisation, weakened the authority of

[111] The 1922 minutes of the ISTC are revealing of the efforts of the trade union members to amalgamate the rules, working ethos and monetary standards of more then 25 differentiated trades. For instance, for the first time in the history of the trade unions, the workers are compelled to wear uniform during working time. See the Appendix contained in Ashton, 'Man of Steel' (1955). Keith McClelland (1987) has shown how the trade unions' curbed the individualistic and craft-oriented attitude of the skilled artisans through the creation of internal labour markets of 'wage earners' opposed to the individualistic bargains of the artisans- 'trade owners'.

[112] According to Pollard, in 1930, only one fifth of the cutlers belonged to trade unions (1959: 229).

[113] Several issues of the Sheffield Independent of 1845 – when Mill's 'Principles of Political Economy' arrived in Sheffield- confirm this point.

the artisans on the shopfloor; and the social fragmentation that followed the means test legislation, weakened their patriarchal status and social connections in the neighbourhood.

Housing Policy

Together with the welfare policy of the Board of the Guardians, the city council impacted on the Attercliffe community through its housing policy. In 1924 the city council appointed Patrick Abercrombie to direct a survey of city housing needs. His 'Abercrombie City Plan' strongly emphasised the unhealthy mixture of dwellings and workshops, and of light trades (tool workshops) and heavy trades (steel firms) in the same yards and back-to-back houses of Attercliffe and highlights that 'in almost all of the 16,529 back-to-back houses of the city, one side of the court is occupied by a factory and small workshops are placed in it' (ibid: 27). The plan recommends the demolition of the back-to-back houses because their courts lacked of ventilation and constantly absorbed the dust and smoke of the steel factories close by. According to the planner, this mixture of smoke and dirt created 'promiscuity' and 'lack of cleanliness' among the local residents and ultimately prevented the consolidation of stable families' (ibid: 30). The solution, according to Abercrombie, was to separate houses from work, poor dwellings from respectable ones, industrial spaces from leisure gardens, clean air from industrial pollution. In sharp contrast with the dense smoke and crowded spaces of the back-to-back houses of Attercliffe, the Labour Council offered the community emancipation in the form of clean and airy estates and virtually free transport. In fact, in 1926 the city council built 25,000 new houses on the Manor estate, land that had once formed the huge hunting park of the lord of the manor. The younger residents of Attercliffe moved to Manor, where they enjoyed lower rents and mortgages and cheap public transport. After 1934, an average of 2,400 houses were completed every year and by 1938, 24,000 slum dwellings had been cleared.

National Steel

By 1960, the majority of the back-to-back houses in Attercliffe had been demolished and its inhabitants moved to the surrounding council estates. One of them, 'Park Hill

Flats' is a high-density[114], vast council development that still stands on the top of a hill located on the main roundabout in the Sheffield city centre. During the 1960s, according to Paul, at the time a shop steward at Firth – Brown, Attercliffe was a real proletarian community. In fact, its 60,000 steelworkers – who were mostly young – had settled in the company houses along Attercliffe Road and in the new Labour Council estates surrounding it. Thanks to the public transport system, the community was in constant movement and thanks to the trade union struggles its income was equal and its skills interchangeable. In Sheffield, the post-war rhetoric of reconstruction perfectly fitted into the Keynesian project of defeating unemployment through the increase in public spending. In fact, the Sheffield steelworkers who had forged the nation's guns, ships, armour and airplanes during the conflict now had the equally noble task of re-building its infrastructure. Massive amounts of steel were used as material and symbolical framework for the great infra-structural project boosted by the local council: a new railway line and several new roads, bridges and highways, the Sheffield stadium and several steel-framed and high density buildings, skyscrapers and car parks. These massive architectural projects provided new spaces of mass aggregation for the steelworkers whose habits of consumption – football matches, fishing trips, shopping – were progressively synchronised to the rhythms of mass production of the local steelworks.

After the nationalisation of the steel industry, in 1967, the manufacturing base in Sheffield further expanded, reaching virtual full employment. At that time in Attercliffe, almost every worker was a steelworker[115] and the steel factory dominated the public imagination and the private lives of the local people. Company allotments, ramblers' clubs, football clubs, fishing matches, boy scout associations and company canteens attracted the workers and their families into the company premises during the weekends and connected teams of workers of different companies in weekly and friendly confrontations.

The new kind of special steel that developed after the Second World War – light, clean and flexible – pushed the working class families into new patterns of consumption.

[114] 180 persons per acre.
[115] In Attercliffe there were 70,000 people employed in the steel industry from a total population of about 100,000.

Janice – the wife of a communist AEEU member – remembers the appearance of Hoovers, aluminum sinks, freezers, dish washers and washing machines in her house as a liberation of the women from their heavy duties connected to the reproduction of the household.

The income of the steelworkers was notably higher than the – often hidden – incomes of the elder generation of toolmakers and artisans of Attercliffe[116]. As a consequence, these latter were still trapped in the old patterns of consumption. Besides, they found it hard to give up their activities of production and accept new patterns of consumption. In fact, rather than buying objects that produced instant 'cleanliness' – by sucking up dust or freezing food – women preferred to produce 'cleanliness', by manually diverting the fluxes of dust, cold and smoke from their households and transforming deteriorating food or textiles into finished meals or carpets. Outside the households, these families rarely owned a car, not only because of their low income but also because they preferred to walk, rather than to move across their neighbourhood with some kind of mechanical means of transportation. Thus, Tony[117] and Freda's[118] contempt for mass consumerism, their distaste for brand new clothes and easy consumption, their proud emphasis on the manual skills by which poor people 'mend', 'repair, 're-use' consumables, and the intensity of the productive activities that are embedded in their acts of consumption, reflects a long-lasting attitude among the Attercliffe artisans. As I have shown previously, this view strongly contrasted with the 'under-consumption theories' of the industrial wage workers

During nationalisation, the wage differential between skilled and unskilled labourers in the steel industry was definitively abolished and the industrial base became homogeneous both in terms of productive skills and consumption patterns. Thus, the difference between the industrial proletarians and the artisans of Attercliffe was now more visible than before. In fact, these two groups had different patterns of consumption and were enclosed in two different kinds of economic and social spaces characterised by differentiated architectures, routes of communication, laws of motion and frequency of interaction and where air, bodies and products moved and reproduced in totally different

[116] See the statistics contained in J.Westegaard, I. Noble and A. Walker (1989).
[117] Who works in the hot department of Morris.
[118] The wife of Teddy, one of the workers of Morris.

ways. On the one hand, the second generation of steelworkers who grew up in the company houses built in the 19th century now experienced a privileged position not only on the shopfloor but also in the neighbourhood, where their houses were endowed with modern sanitary provisions and surrounded by a friendly, young and politically progressive neighbourhood and clean air. The new M1 extension connecting the city centre to the Lower Don Valley cut Attercliffe in two, fostering mobility between the periphery and the centre of the city, but diverting the daily walks of its few residents and enclosing their daily interactions within the most ancient core of back-to-back houses. Here, the ancient core of workers – tool makers, bricklayers, blacksmiths, forgers and light grinders – still inhabited unsafe houses and followed ancient patterns of consumption and reproduction.

Decline of the steel industry and the decomposition of the social body of the steelworker

In 1984, the local labour council created SERC (Sheffield Economic Regeneration Committee), a partnership with the private sector through which it bought industrial land from the local steel firms and compulsorily purchased the houses of most of the 800 residents of Attercliffe. As a consequence, these latter scattered either to the small ex-mining villages located on the south-eastern outskirts of Sheffield, or to Darnall and Tinsely, two areas distant from Attercliffe by only a few hundred metres. Dispersed at the periphery of Sheffield, they were promised that new houses would soon be built and that the community would shortly re-join. As a matter of fact, a closer look at the 'Structure of the Plan policy' (1981) of the time[119] reveals the different intentions of the developers. In fact, the plan is clearly intended to curb the small tool and steel businesses of the Attercliffe slums in order to 'to upgrade the Valley's environmental needs' (ibid: 34).

The new city plan was meant to give life to the old dream of Patrick Abercrombie of clearing the city's industrial heartland. Interestingly, the plan describes the objective of local re-generation[120] as one of eliminating the 'visual and industrial pollution' of the

[119] 'Lower Don District Plan'. 1981, Planning Department, Sheffield City Council.
[120] In fact, the plan states that 'many properties in Attercliffe Road are in poor condition and generally detrimental to the environment of the Valley, creating a particularly poor impression on visitors to the

Attercliffe slums. The objective of the plan is to destroy the 'small workshops', 'scrap-yards', 'and labour-intensive firms' of Attercliffe and its houses, because 'unhealthy, unsafe and ultimately visually polluting to the eyes of the investors driving Sheffield through the M1' (ibid: 25). The Plan uses the same medical rhetoric of industrial pollution used in the past, both to convince the local residents to move out and to recommend the closure of the local steel factories *because* of their polluting effects on the land where they were located. The Plan also declares the council's promise of rebuilding new homes for the Attercliffe residents as 'irresponsible', due to the fact that dwellings built on ex-industrial land were hazardous for their residents and suggests instead that the industrial land be re-landscaped into a post-industrial clean space, where 'nature' would replace 'industry' in the public eyes.

As a consequence of the decline of the local steel companies, cheap industrial land and vast economic spaces were made available to the new capital (some claim that the decline of the steel industry was the consequence of these new entrepreneurial interests). In fact, instead of building new houses for the old residents, the SERC sold the land to P. Sykes, a Yorkshire businessman who converted Attercliffe and the Lower Don Valley into an extensive leisure area including the Don Valley Stadium, the 'Centerteinment', Mac Donalds, Meadowhall, and several retail centres. In the 'Lower Valley Supplementary Report on Land and Property'[121] the transaction between the council and the private developer are highlighted and the goal of 'reducing the Attercliffe residents to less than 200' clearly stated. As a consequence, the Plan also adds that 'the continued decline of the local resident population necessarily alters the requirement for social and community facilities in the Plan area, and many existing educational facilities will be closed or re-located'. In conclusion, I suggest that the planning department of Sheffield enhanced the interests of the new capitalists in three ways. First, it compulsorily purchased the houses of the steelworkers and destroyed the shopfloors where steel was – informally – produced. Secondly, it bought land from the steel entrepreneurs and sold it at a very cheap price to the new capitalists. Finally, it

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City arriving from the Motorway, and deterring potential inward investments. The plan recognises the need for the removal of bad neighbour uses closely linked with the local steel and metal industry and of obnoxious uses as scrap-yards, car-breakers and less capital- intensive businesses' (ibid: 20). 'Redundant properties and small industrial shops will be demolished and the sites landscaped and provided with proper layout to enhance the appearance of this major route into the city from the M1 motorway' (ibid: 30).

[121] 1986, Planning Department, Sheffield City Council.

relocated the local school, labour exchange and welfare services outside the neighbourhood.

In Sheffield, mass unemployment hit the steelwork community in a profound way. Accustomed to the Keynesian rhetoric that depicted them as the forgers of the nation's infrastructures, of its vast spaces and objects of mass consumption, steelworkers were used to believing that steel was at the core of the nation's progress and they therefore read the decline of the steel industry as a major breakdown in the history of civilisation. Secondly, because male unemployment in the steel sector was matched by increasing female employment in the service economy, male steelworkers lost confidence and pride in their strong bodies and in their role as family breadwinners. The main income redistribution between male and female employment took place within the families of the second generation of steel labourers who had been employed in the bulk steel industry during its boom in the 1960s, whereas it involved to a lesser extent both the skilled workers employed in the private engineering and special steel sector and the artisans of Attercliffe whose labour market – that in the words of the economists was a 'secondary' one – was insulated from the fluctuation of real economy. As a consequence of the decline of the steel industry and of the substitution of male steel labour with female service industry labour, the positive image generally associated with the muscular bodies of the male steelworkers suddenly declined. Steelworkers started to be portrayed by the media and the local businessmen as characters of the past, their labour transfixed and objectified into several local Industrial Museums and their awkward and solid physical presence – aesthetically and economically inconsistent with the new economy – portrayed as a living memory of the heavy national industrial heritage.

Since the 'Health and Safety at Work Act' (1974), industrial workers had been given increased power to obtain industrial compensation and pensions for permanent disability. An analysis of the history of British workers' compensation legislation is not part of the present analysis[122], but it can be safely argued that the legal developments of the time increased the employees' responsibility and control over their own health and safety conditions in the firms and on the other hand, it made easier for them to receive

[122] Interesting insights on the history and politics of workers' compensations are found in Bellamy (1997).

non-means tested disability benefits. For instance, the 'Occupational Health and Safety Act' (1985) failed to consider the directors and chief executives liable for manslaughter in case of industrial death, but increased industrial compensation for the injured – and redundant – workers[123]. In Sheffield, the AEEU negotiated average early retirement packages for the elder workers of £3,000 with the managements, whereas the Labour Council and the ISTC endorsed the government's health and safety campaign. As a consequence, 'illness and industrial disease' suddenly spread among the Sheffield steelworkers.

Until now, the causes of industrial illness were generally attributed to the personality of the steelworkers and embedded in their very public persona. In fact, in the public imagination, steelworkers were chain smokers, self-sufficient, passionate and irascible, and therefore it was no wonder that they suffered from lung cancer, deafness and heart diseases. When the steel industry started its decline, public statistics, medical debates and pamphlets circulating on the shopfloor and inside public Hospitals, brought to the public attention the medical dangers of industrial production[124]. As rolling mills, furnaces and forges were disassembled to be sold in the scrap market, steelworkers accepted the deconstruction of their bodies and the selling of its parts on the industrial compensation market. Thus, rhetoric of the era of national steel, focused on the brave personality of the steelworkers and on their innate disregard for industrial danger, turned into the post-industrial concern for the deterioration of their social bodies. Simon Pickvance, founder of the SOHP (Sheffield Occupational Health Project), explained to me that until recently steelworkers refused to acknowledge being affected by industrial diseases. In fact, because of their public persona as strong and brave workers, they perceived work-related illness as a sort of personality fault. Nevertheless, according to Pickvance, with the decline of the steel industry, steelworkers used industrial compensation as a form of political action against the state.

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[123] Many steelworkers are very critical of the fact that the trade unions prefer to negotiate higher industrial compensation, rather than to prevent industrial deaths through recognising legal corporate responsibility in the cases of industrial death. Ash – a worker of UNSCO – suggests that the reason for it is that increased corporate responsibility would decrease workers' productivity.

[124] In 1985, according to Health and Safety Executive statistics, there were more than 1,000 monthly work-related attendances in the Accident and Emergency Departments of Sheffield hospitals. National figures suggested that over 60,000 adults in Sheffield had asthma, 70% of the steelworkers had noise-induced deafness, and that death from lung cancer was 20% more common in Sheffield than in other parts of the country.

In fact, during an evening spent at the 'Travellers' pub with 'Mad Jack'– a miner who lost his finger working on the face in the Carbrook pit – I was made aware of how transparent and efficient the market in workers' body parts is. Mad Jack explained to me that for the loss of a finger the state pays up to £ 6,000, for vibration syndrome £26 per week, for partial skeletal paralysis £ 53.80 per week and for industrial death £57.65 per week plus child allowance. Thus, the new legislation on workers' compensations turned unemployment into disability[125] and dissolved the social body of the steelworkers into scattered market transactions.

Between 1979 and 1982 the average joint income per week in Sheffield in a household with two persons was £40 for an unemployed and £60 for a disabled worker[126]. Families could barely survive on this income and as a consequence they had to pool – as happened at the time of early industrialization – heterogeneous forms of income, casual labour and social interactions into the household. Having become invisible in the urban landscape, in the macroeconomic models of the monetarists and in the public imagination, the steelworkers retreated to the ancient, dense and fragmented social and economic spaces of Attercliffe.

Conclusion

In Sheffield, the 'governmental' creation of nuclear families, sharing synchronised times and collective spaces of production and leisure and common political belief – the making of the working class – only partially succeeded. In fact, the historical core of the Sheffield working class, the Attercliffe artisans, never thought about themselves in terms of 'class', or as collective legal subjects[127], or separate domestic units or independent physical subjects. Rather, as Roberts (1971) shows, the sub-proletarians of the slums remained isolated from the economic and social spaces of the industrial working class and dealt with poverty by reproducing the dense webs of kinships and hierarchy on which their small-scale production relied.

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[125] A recent study of the Economics Department of Sheffield University (2001) highlights that more than 40% of the Sheffield disability claimants are in fact able bodied unemployed. Similarly, Meek (The Guardian 05.09.2001) claims that the government tolerates high disability claims to deter the statistical evidence of mass unemployment.

[126] In Westergaard, Noble and Walker (1989).

[127] The link between the construction of the collective juridical subject of the wage earner and the objectification of the working class is made by both M. Nucleous (1996) and Steinfeld (1991).

In the previous chapter, I have shown how capitalist relations and technologies of production fragmented steel labour into 'artisans' and 'proletarians'. In this chapter, I have shown that state policies reproduced this fragmentation at the level of the neighbourhood through the medical discourse of working class 'health'. My point here is to stress the role of the medical narrative in changing the workers' subjective perception of their bodies, of their physical properties and of the consequences of their social interactions. From this point of view, industrial discipline was not only imposed 'from above', through state policies aimed at separating the realm of 'work' from the realm of 'home', but it also appealed to some segments of the working class. In fact, the medicalisation of poverty and the stigmatisation of the 'promiscuity'[128] of working class slums, convinced some of their residents that the struggle for working class emancipation was a struggle for better styles of consumption and living standards, more than a struggle at the point of production.

The medical discourse transformed the conflict between capital and labour into a conflict between different sections of the working class, with different attitudes towards 'cleanliness' and 'pollution', different strategies of production and reproduction, and forms of physical, social and economic interaction. The ageing population of artisans fought poverty by mixing together manual skills of production and reproduction in the neighbourhood and by pooling heterogeneous incomes, goods and resources into extended familial units. In this space, water, air and heat connected men, women and animals in dense and centripetal networks of industrial production, food consumption and urban leisure. The younger population of steelworkers fought poverty by enlarging the boundaries of the community into a centrifugal, reproducible and homogeneous proletarian space, where nuclear families and units of production were enclosed in uniform and modular urban space separated from the natural domain[129].

The Attercliffe slums proved to have been the most resilient and stable of these two social formations, because their strict embrace with poverty also isolated them from the cyclical falls of the several myths of modernity and progress that made other sections of

[128] The term 'promiscuity' recurs often, both in 19th century accounts of working class slums and in contemporary ones. See for instance Roberts (ibid).
[129] I include here also the 'respectable artisans' – skilled engineers, grinders or melters – who were increasingly incorporated into the industrial proletariat since the post-War years.

the working class wealthy in the past but socially fragmented. The experience of poverty of the artisans of the slums, and the local economic and social institutions that they developed in order to cope with it, created an urban space where the new poor migrate in times of de-industrialisation. This space, like the Chicago Jewish ghetto described by Louis Wirth (1956), is a crystallisation of ancient needs, practices and social relations and as such is insulated from the straightforward trajectories of progress into circular and cyclical patterns of fissions and aggregations.

In his *Time and Social Structure* (1970), Meyer Fortes stresses the importance of considering 'time' and 'space' relations in the study of the structure of social organisations. Fortes was particularly concerned to demonstrate that 'lineage' and 'kinship' were two interdependent, rather than mutually exclusive, principles of social organisation in Tale society. In this chapter, I have followed Fortes in showing the interrelations between nuclear and extended families and the structural conditions underpinning their long-term dynamics. My historical evidence challenges the taken-for-granted assumption that nuclear kinship is the sole principle of social organisation in England, and both the focus of its strength in the past – as in Laslett – and of its fragmentation in the present – as in the Social Policy literature on kinship. In fact, my evidence shows that nuclear and extended families exist in different 'times' and 'spaces' of production, that is, that the principles of family organisation have to be studied in their structural inter-connection with the principles of the organisation of the factory and of the neighbourhood. My study also stresses the importance of the state in the creation of the ideology of the nuclear family or in its dissolution.

In the first part of my thesis I have shown the history of the social and economic fragmentation of steel labour that took place in the neighbourhood and on the shopfloor. Before I turn to the ethnographic section, I now provide a graphic description of the occupational and residential background of the subjects of my ethnography, in order to show the continuity between past and present forms of working class fragmentation.

Figure 4. Street party, Attercliffe.

Figure 5. Back-to-back houses, Attercliffe. c. 1910.

Figure 6. Back-to-back-houses, Attercliffe.

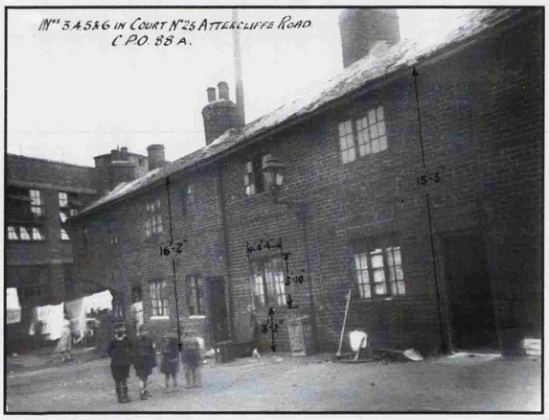


Figure 7. Attercliffe court.

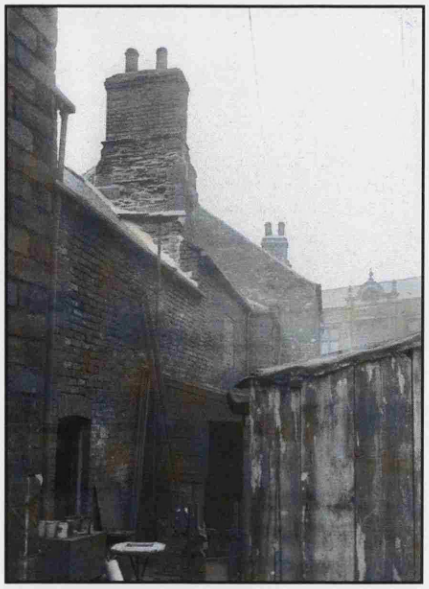


Figure 8. A cutler's workshop, c. 1920.

Figure 9. Waste rubber merchant's workshop.

Figure 10. Attercliffe Street.

Figure 11. Company houses.

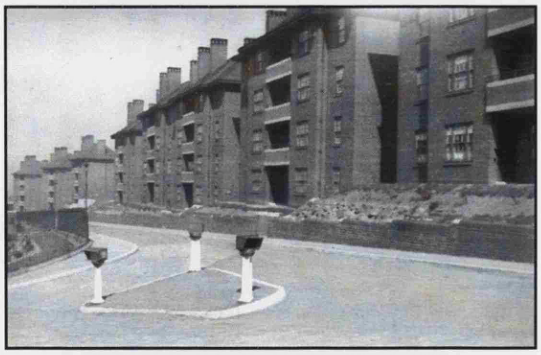


Figure 12. Working class suburb, Wincobank, c. 1920.

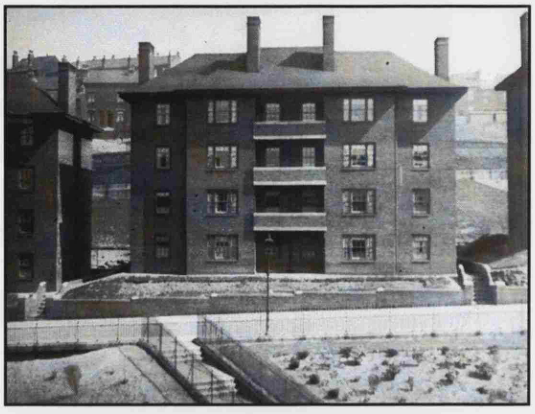


Figure 13. Working class suburb, c. 1920.

Figure 14. Bessemer Road, c. 1960.

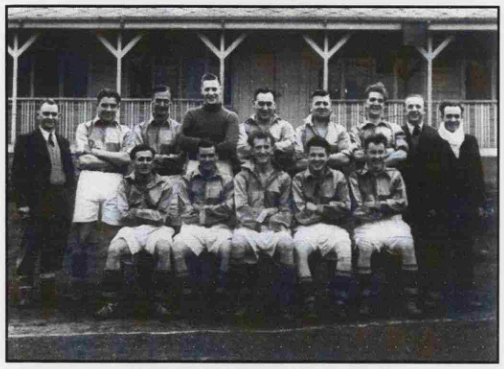


Figure 15. The company's soccer team, c. 1940.

Figure 16. The company's swimming team, c. 1930.

Figure 17. Workers' marathon, c. 1940.

Figure 18. Workers' families in the company.

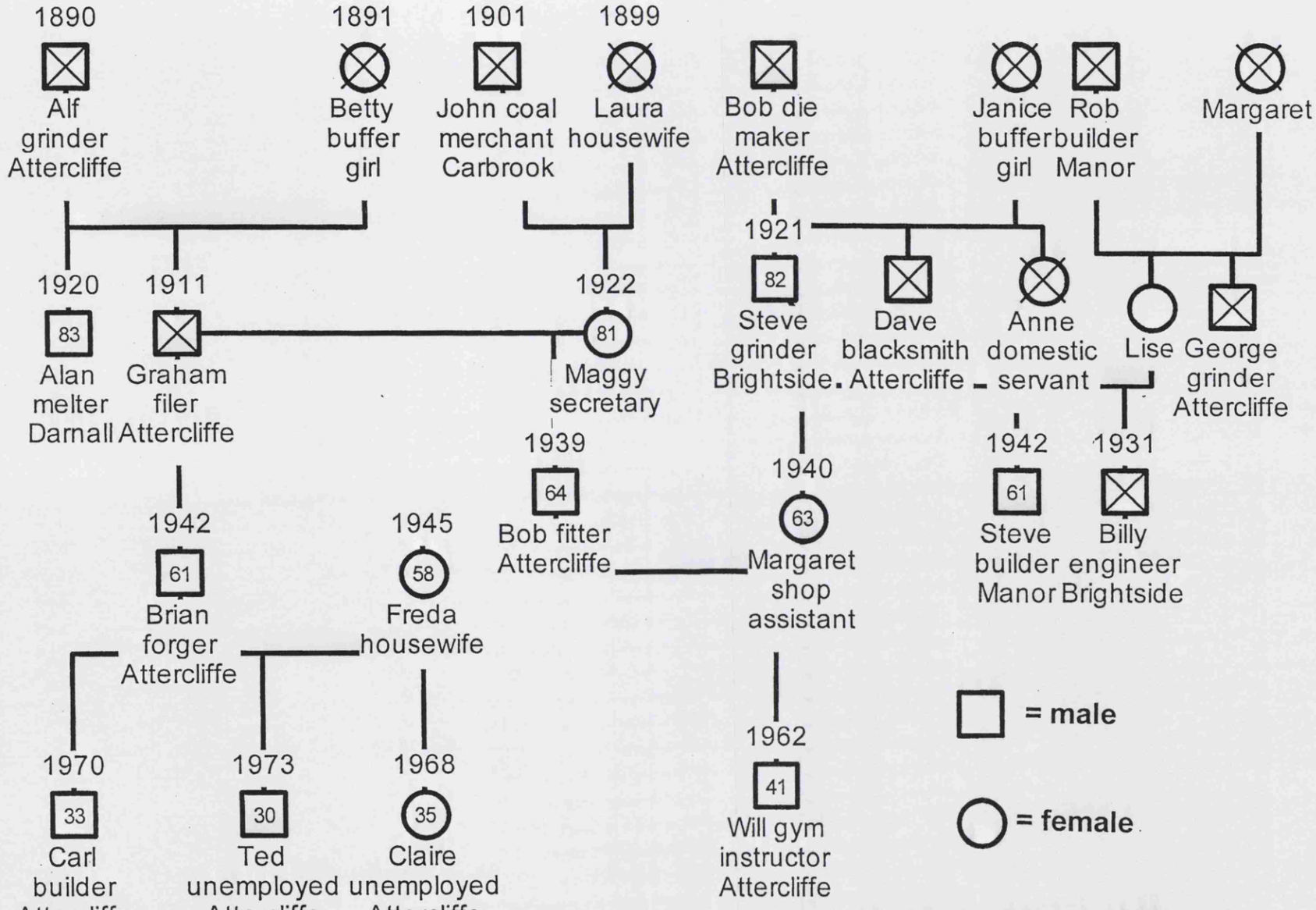
Figure 19. Workers' families in the company.

Figure 20. Company's organised trip.

Figure 21. The workers of 'Steel & Co' march towards the 'speech corner'.

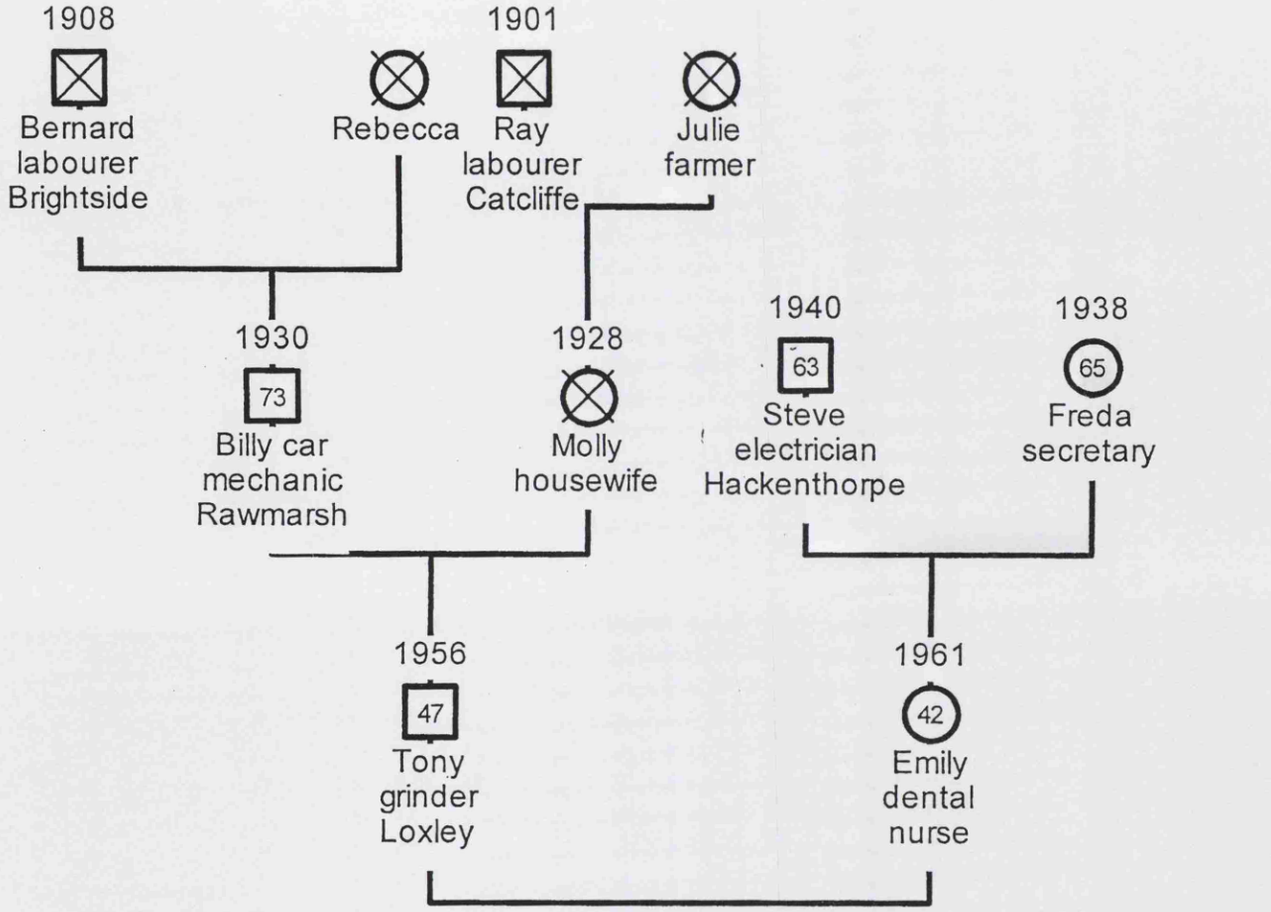
Figure 22. The women of the turning section.

KINSHIP DIAGRAMS AND MIGRATION CHARTS



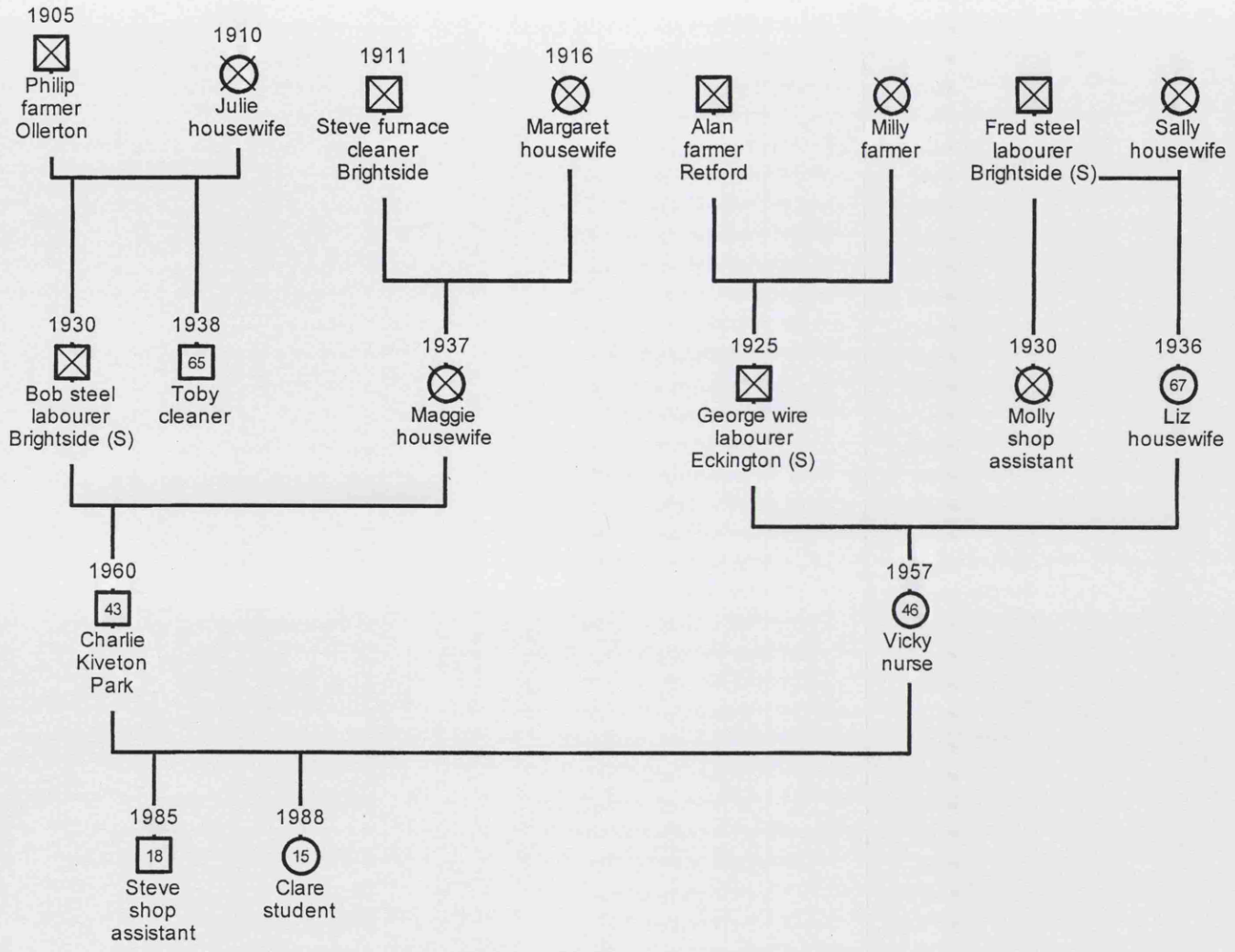
Kinship diagram of Bob and Brian, forgers at Morris.

(Fig 2)



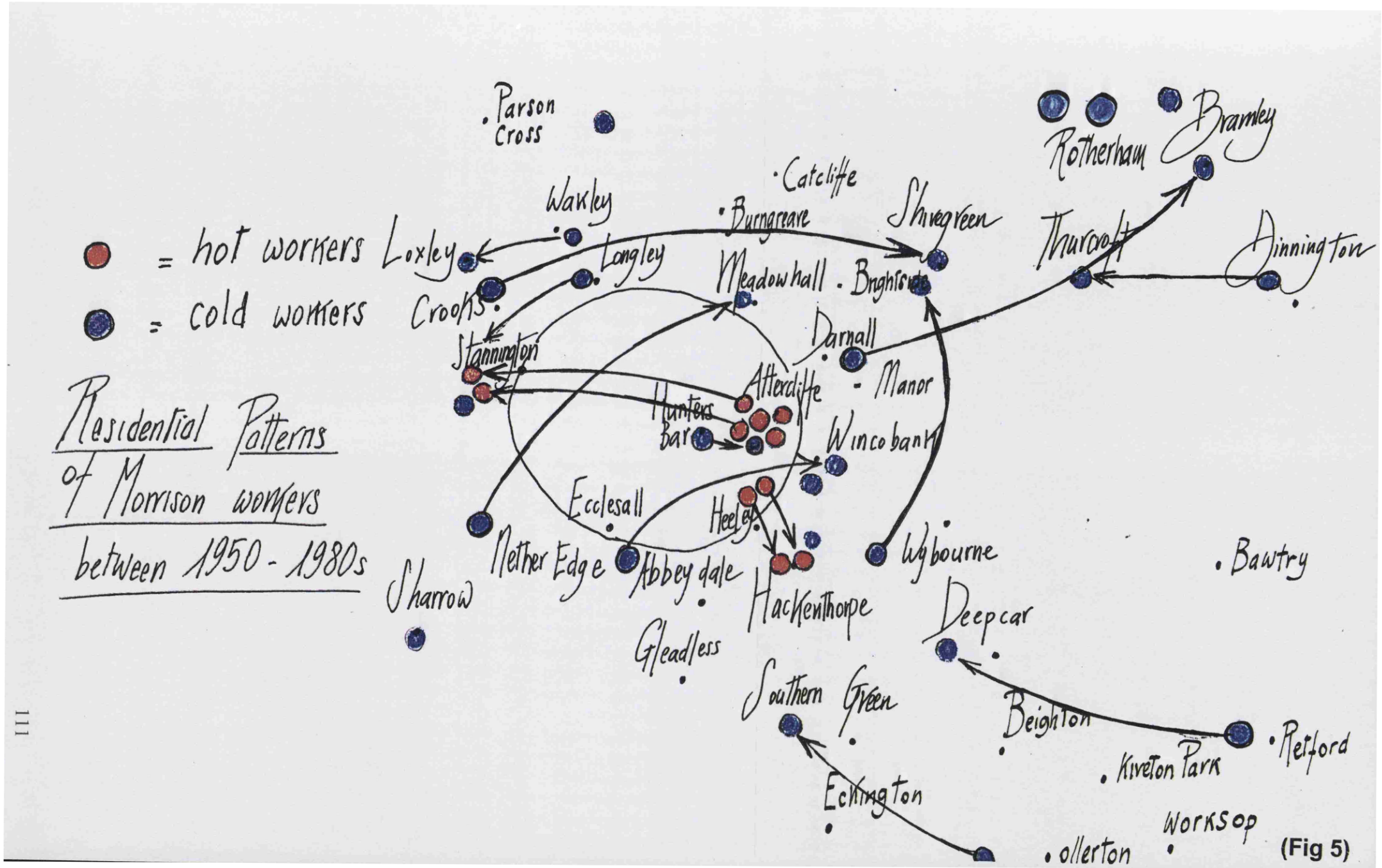
Kinship diagram of Tony, grinder of Morris

(Fig 3)



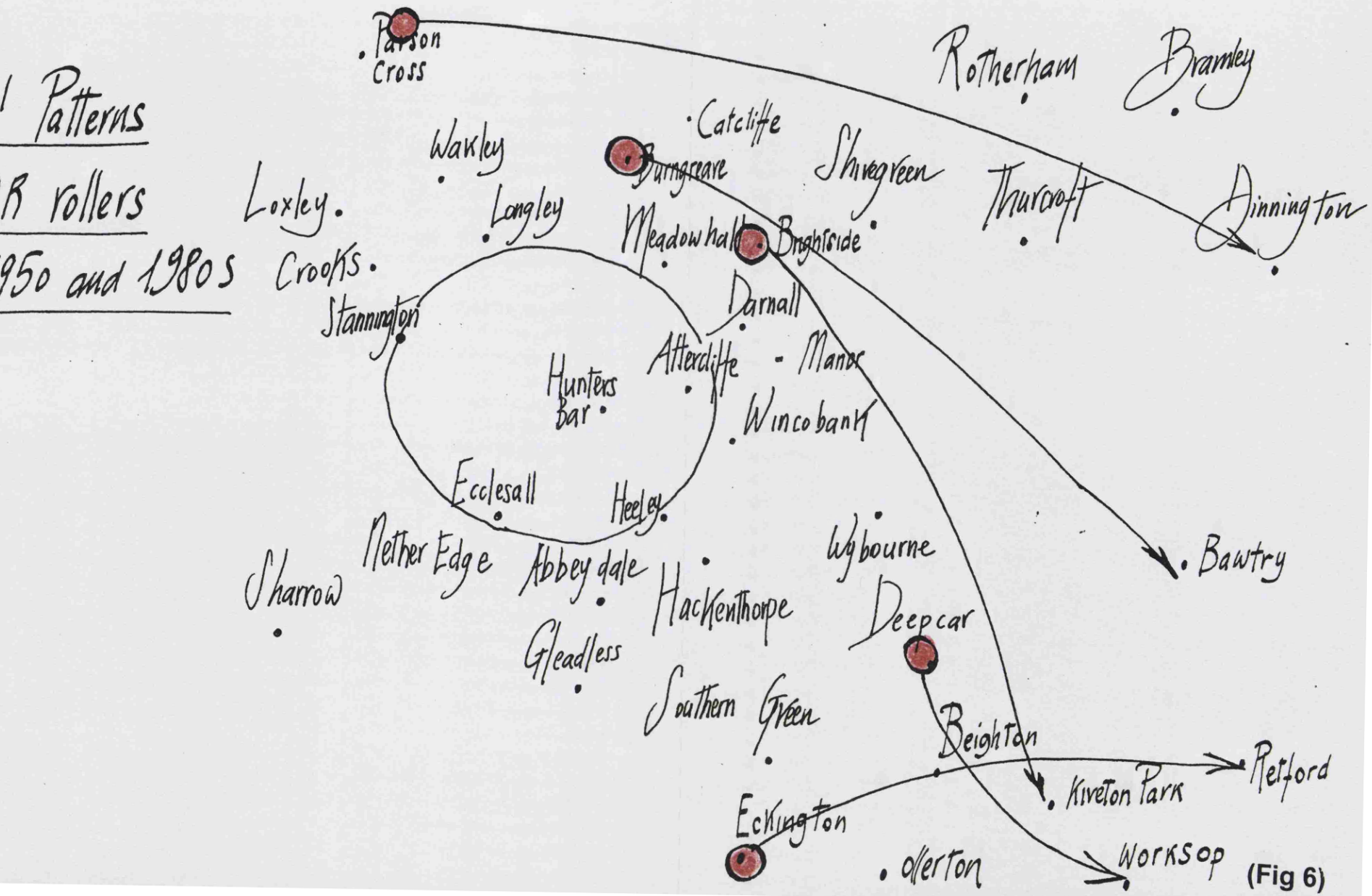
Kinship diagram of Charlie, roller of UNSOR

(Fig 4)


= hot workers
= cold workers
Residential Patterns of Morrison workers between 1950 - 1980s
Parson Cross
Catcliffe
Rotherham
Bramley
Wadsley
Burngreave
Shiregreen
Thurcroft
Dinnington
Loxley
Longley
Meadowhall
Brightside
Crookes
Darnall
Stannington
Manor
Hunters Bar
Wincobank
Ecclesall
Heeley
Nether Edge
Abbeydale
Wybourne
Bawtry
Sharrow
Hackenthorpe
Deepcar
Gleadless
Southern Green
Beighton
Retford
Kiveton Park
Eckington
Worksop
ollerton

(Fig 5)

Residential Patterns of UNSOR rollers between 1950 and 1980s



(Fig 6)

The three kinship diagrams in Figures 2, 3 and 4 show the residential and occupational patterns of the ancestors of, respectively, Bob and Brian, the forgers in the hot department of Morris; Tony, the grinder in the cold department of Morris; and Charlie, the roller at UNSOR.

Figure 2 shows the residential stability of the families of Bob and Brian in Attercliffe and their long-term involvement in such craft trades as forging, grinding, melting. It also shows the involvement of some female members of the family in tool production. Figure 3 shows that, at the beginning of the 20th century, Tony's ancestors were employed as unskilled labourer (at 'Jessop' and 'Firth Brown'), and lived in Brigthside and Catcliffe two working class suburbs, where company houses were developed at the turn of the century. Interestingly, Tony and Emily's families change occupation and residence with each generation. Figure 5, showing the residential patterns of the Morris workforce during the last fifty years, confirms the residential and occupational stability of the hot workers, and the occupational and residential variability of the cold workers. The former mainly lived in Stannington and Attercliffe, two areas where employment in the tool and small engineering sector is still high. The latter migrated to the eastern periphery of Sheffield, where the steel industry was localised until the 1980s. These areas offered not only wage labour in the steel industry, but also cheap homes to buy, following the privatisation of council homes during the 1980s.

Figure 4 shows that Charlie and Vicky's families have an occupational history of unskilled labour in the steel industry and of farm labour, and a residential history of migrations between the working class suburbs of Brightside and Eckington and the agricultural villages located between Sheffield and Nottingham. It is interesting to notice that Charlie and Vicky's fathers, both sons of farmers, became labourers in the steel industry, rather than finding employment in the several pits that existed around Aston, Ollerton and Retford. This fact suggests that the steel industry recruited more unskilled labour than the mining industry. Besides, the return of Charlie and Vicky to the rural areas where their ancestors lived, seems to confirm my claim, in Chapter 1, of the high mobility of unskilled labourers between the steel factories and their parents' rural residences. Figure 6 shows the migration of the rollers from the working class suburbs of Sheffield into rural areas located east of Sheffield. This migration can be

explained partly with the low prices of local accommodation and partly with the rise in employment that followed the relocation of a massive food-processing factory near Kiveton Park.

The charts provide an interesting link between the history of the working class that I have reconstructed in the historical sections, and its articulation today. More specifically, the hot workers of Morris seem to be the descendants of the 'artisans' of the past, whereas the cold workers of Morris and the rollers of UNSOR, the descendants of the 'proletarians' of the past, who still migrate between Sheffield and its suburbs in search of wage labour. I suggest that the relative social and economic stability of the artisans in the past, can be explained with their control over small-scale tool production and over the local informal economy and with their strong social ties in the neighbourhood. I also argue that the greater social and economic instability of the wage labourers employed in the steel industry can be explained in terms of the unsettled nature of the steel labour market and of their fragmented social structures.

In the next section, I test the hypothesis of the artisans' greater control over the process of production and of the 'proletarians' greater fragmentation, with reference to the labour processes of Morris and UNSOR. In the final section, I test the hypothesis of the greater social fragmentation of the latter vis-à-vis the former outside the factory gates, and assess the reasons for, and the consequences of, the reproduction of past forms of working class fragmentation in the present.

PART TWO

THE SHOPFLOORS

CHAPTER THREE: UNSOR STEEL

MAIN INFORMANTS

HOT DEPARTMENT

MELTING SHOP

Phil; Dave: melters
Roger: supervisor

Farrell; Amstrong: labourers
Mr. Heaps: EAF manager

ROLLING MILL

Charlie; Ash; Roger; Jack; Toby: rollers

Alan: supervisor

Ian: fork-lift truck driver

COLD DEPARTMENT

BAY2

Lind: supervisor

Tony; Sean; Bob; Andy; Jim: labourers

BAY3

Tony, Willie, Sean: grinders

BAY 1

Jimmy: acid tank labourer

AUXILIARY WORKERS

Antonio; Jim: fitters
Mel: die maker
Craig: cleaner

QUALITY CONTROL DEPARTMENT

Ken Asthon: manager

Chris: supervisor

Steve Cash: second supervisor

MANAGERS

Mr. Garrett: Health and Safety manager

Lou Williams: manager of HOT department

Mr. Bowers: general manager
Lady Bowers: personnel manager

OWNERS

Mr. Ambrose

David Thorpe

Introduction

As I have shown in the first chapter, the economic policies of the last two Labour governments have fully endorsed the belief in flexible production[130]. In their seminal work, Sabel and Priore (1984) describe flexible production as a shift from the mass production paradigm to a system of flexible specialisation involving the re-emergence of artisansal craft skills combined with new technology of production in small and medium-sized firms. At the core of flexible production is 'flexible specialisation' that involves both a productive and a competitive shift from mass production. In fact, from the point of view of production, 'flexibility' is achieved through 'multiskilling' and 'team-working' (functional flexibility); through flexible and short-term labour contracts (numerical flexibility), and through variable working times of the workforce (temporal flexibility). From the point of view of competitive strategy, flexible production involves specialisation in small and high quality segments of the market. The authors found evidence of successful flexible production in the American steel sector where technologically integrated mini-mills producing with a flexible workforce and specialising in the high quality steel market were replacing the conglomerates working in the Fordist paradigm.

Since the 1980s, the UK steel industry – especially the BSC – has endorsed the paradigm of flexible production by eroding the demarcation between craft workers (forgers, rollers, tool workers) and production workers, and by 'multiskilling' the workforce[131]. From the point of view of the management, flexibility increases communication within the working group, breaks the inefficiencies of the seniority system by setting company productive standards, provides ground for continuous self-improvement and training and locates accounting control on the shopfloor, by making the team-leader responsible for the line budget. From the point of view of some Industrial Relations scholars, flexible production does not represent a technological and competitive shift from the Fordist paradigm but a long-established capitalist technique of fragmenting the workforce between a 'core' and a 'periphery'[132]. For instance,

[130] For instance lifting import tariffs and subsidies to the steel industry, attracting capital and encouraging trade deficit through the support of the national currency. Regarding this point, see also Hirst and Zeitlin (1989).
[131] For a detailed reconstruction of the 'flexibilisation' of the steel industry, see Blyton et al. (1993)
[132] Pollert (1998).

according to P. Ackers, 'team working follows a long standing effort by employers to weaken occupational consciousness and move away from strict control hierarchies where workers are tied to individual tasks and paced either by foremen or by technology along traditional control line' (1995: 15).

Nevertheless, in spite of its flexible technology of production and its high quality market strategy, UNSOR was closed due to the overwhelming power of Corus, a conglomerate mass producing low quality steel. Besides, in spite of the emphasis of the government on flexible production, mini- mills and global economy, the state facilitated both the consolidation of the Fordist system of production of Corus – linked to the national interests of the ex-BSC capitalists – and ultimately the closure of UNSOR, the only mini-mill left in England. Thus, in this chapter, I will show how 'flexibility' was enforced on the UNSOR shopfloor and how this fragmented the perceptions, practices and languages of steel labour and ultimately transformed the conflict between capital and labour into a generational conflict within the workforce.

The second theme of the chapter, is a critique of Burawoy's argument that the workers' consciousness is crafted at the point of production. Unlike Burawoy's claim, the 'shopfloor culture' of the workers in UNSOR is only partially determined by the technical system and the labour organisation of the firm, whereas a big part of the workers' consciousness, or its absence, can be explained in generational terms. That is to say, age is a cultural category through which the workers read and reproduce their fragmentation on the shopfloor[133].

The chapter also highlights the 'medical discourse' through which the owners and the Health and Safety manager legitimised the introduction of new machines and flexible working patterns on the shopfloor aimed at cutting jobs and intensifying production. The owners' 'medical' assumption that manual jobs had to be cut because they were 'dangerous' and 'boring' was uncritically accepted by local MPs, trade union officials and by some workers of UNSOR itself. The medicalisation of industrial labour in UNSOR suggests an intriguing historical parallel. In fact, if concerns for the health of the working classes were used by the Victorian capitalists to consolidate the 'system of

[133] On this point, see also Rofel (1999).

manufacture' in the past, the same concerns are used by post-modern entrepreneurs to dismantle it today.

Kiveton Park

Kiveton Park is a small town[134], located south east of Sheffield, between the A57 and the M1 roads. Like many ex-mining villages around Sheffield, it attracted wage workers from Sheffield and Rotherham, when the ex-miners council homes were privatised and sold off cheaply. The closure of the local mines emptied Kiveton of its younger residents, shops and schools, and transformed it into a dormitory for the commuters who moved in. The core of Kiveton Park consists of two parallel roads and of six shops: a post office; a hairdresser; a newsagent; an estate agent; a chemist and a corner shop. At the beginning and at the end of each road, a CCTV camera monitors the movements of its inhabitants, especially of the young boys, when they gather to smoke by the miners' wheel, a commemorative reproduction of the real one, which once stood there. Along Wales Road, people walk their dogs or go to the local post office amidst the loud noise of cars and lorries, that speed up towards the M1. The miner workingmen's club, a modernist 1960s building of steel and red brick, is visited by elderly ex-miners during the weekends, but not by the younger male population of Kiveton who would rather drive to the pubs located near their working places. Besides UNSOR, the two other main employers of the area are a wire factory and a food-processing factory. The former is located opposite UNSOR, by the Kiveton Park Railway station, and the latter, twenty miles from Kiveton.

The Company

The red-brick walls of the cold shopfloor of UNSOR are invisible from the A57, the main road that, departing from the M1 at exit 31, crosses Kiveton Park towards Worksop and Nottingham. In fact, UNSOR is totally hidden from the gaze of commuters by two gentle slopes of cultivated fields and is surrounded by the beautiful countryside of the Welbeck Estate, owned by the Duke of Portland and patrolled by the estates' gamekeepers who often end up in the company offices with pointer dogs and rifles to collect, according to Alan (the rolling mill supervisor), the rent for the Duke.

[134] With approximately 9,000 inhabitants, and 4,000 households.

There are no fences or gates to regulate the flux of people into and from the firm[135]. A public footpath runs along the gatehouse and cutting across the rod yard and the acid treatment pond, ends up in the Chesterfield canal at the northern end of the firm. The company offices are detached from the rest of the firm and are located on the top of the hill. The windows overlook the cornfield to the west and back onto the shopfloors. The 1970s minimalist architecture contrasts strongly with the Victorian red- brick structure of the cold department and with the dark and corrugated steel of the hot one. It takes five minutes to walk from the company offices into the cold department, and seven minutes to walk from the company offices into the hot one. The rare appearances of the managers on the shopfloor have never caught the workers unprepared. CCTV cameras are located at the four corners of the long yard that connects the cold and the hot departments. Images of the workers walking in the yard appear continuously on the monitor located behind the clock-watch in the gatehouse. Mr. Garrett, the Health and Safety manager, constantly switches his gaze between the monitor and the vast cornfield surrounding the gatehouse.

The metamorphoses of the market: diversification, restructuring, administration and flexibilisation

'UNSOR Steel' was formed in 1994 by the electrician and the marketing director of the previous 'UMRO Steel', the engineering division of the multinational corporation 'SpP Technologies' based in Pennsylvania, USA. 'SpP Technologies' operates in the aerospace and engineering sector, supplying the NASA, the American Ministry of Defence and the automotive sector with components for commercial and military engines, turbine lock-plates, super-alloys, waxes and armaments controls, precision tools and other engineered products. The engineering division of 'SpP', UMRO, was created in 1903 and its first English branch established on the premises of an old Victorian wire-making factory (the grinding bay) in Kiveton Park in 1938. Two other branches of UMRO are still operative in Shannon (Ireland) and Coventry.

In 1994, the two new owners of the company maintained the supply of high carbon and high speed bars, billets and wire rods for the aerospace, mining and automotive sector, while diversifying into the production of rods, bars and wires for the building industry,

[135] In fact, the company has been illegally built on an environmentally protected green site.

industrial engineering and for household and sanitary appliances. The possibility of diversifying between the high segment of the market (aerospace, mining and the automotive sector) and the low one (the building industry, domestic appliances, industrial tools) allowed the company to combine the 'high quality' strategy and the big profits margins connected with the former sector, with a steady supply of lower quality orders connected with the latter, and to minimise the impact of economic downturns in both markets. UNSOR could diversify its market strategy because of its totally integrated production process[136], which allowed it to melt, roll and finish the kind of steel required by the market 'just in time'. In addition to allowing prompt response to market demands, technical integration isolated UNSOR from the price fluctuations of billets, bars and rods, fluctuations that, especially in the special steel sectors, are extremely marked.

The two competitive advantages of the firm were in the melting and the coating process. In the melting shop steel was 'hand melted' by Dave and Phil, who mixed a combination of alloys inside the fire according to customers' specification. Instead of using expensive continuous casting furnaces (like the one used at Corus), automated alloy-injecting pumps and time-consuming chemical laboratories to test the property of the steel before its final pouring into the moulds, Phil and Dave chose the alloys from different piles lined near the furnace, weighed them on a big scale and shovelled them inside, mixing them with oxygen and lime until the steel inside the furnace 'looked' ready to be tapped into the basket. This very archaic method of production allowed great precision in the mixing of the alloys necessary to produce special steel and great savings of electricity[137] and time, given that Phil and Dave generally 'got the heat right' before the time-consuming testing procedure was finished. The coating process consisted in plunging the coils in a steam-heated bath of sulphuring acid, annealing them in the coil furnace and coating them with a solution of phosphate and stearate. The

[136] Integrated production processes in the steel industry are these processes that start from the melting of scrap and end with the grinding of finished bars. Since privatisation, and the merger of ex-BSC companies into conglomerates producing raw steel, steel companies outside the BSC have specialised mainly in the finishing process. For this reason, they have been highly dependent on the BSC pricing policies for raw steel.

[137] Discount on electrical supply had been given to UNSOR on the base of a fixed level of weekly consumption. When the electrical consumption of the furnace reached the threshold, an alarm rang and Phil and Dave lowered the voltage of the furnace.

solution used to coat the coils gives to the final products their peculiar resistance and flexibility, and its formula was kept strictly secret.

Because the competitive advantages of the firm were in the melting and in the coating process, in time of economic downturns – when the company switched to the low segment of the market – the firm finished and coated coils imported from Germany, Australia and Spain, their prices, added to their costs of transport, being lower than their costs of internal production. During these periods of recession, the firm kept on melting special steel, but sold it directly to steel manufacturers, without rolling it, thus leaving the capacity of the rolling mills underutilised.

UNSOR's financial stability was linked to its independence from the prices for special steel and from the pricing policy of British Steel[138], the leading steel producer in the UK. This independence was often stressed by Mr. Heaps – manager of the melting shop – and by the other managers of the firm who felt themselves 'still a little bit American' and definitively 'not part of the British Steel lobby'. In 1999, the consolidations among German, Belgian and Spanish steel makers and the merger of British Steel and the Dutch Hoogovens into Corus – the fifth largest steel producer in the world – weakened UNSOR's position in the European market and reduced its trading profit to £259,000 and its net profit to £5,000. In fact, international consolidations allowed multinational corporations to reduce the price for their steel for two reasons. First, because they dominated larger segments of the market. Second, because mergers boost the shareholders' confidence. For instance, in 1999 Corus distributed to the shareholders £800 million in special dividends – rather than investments inside the company and in spite of the £42m losses of the company – and in turn investors kept on buying Corus' shares, thus increasing the assets of the company and consolidating its financial position.

In November 1999, UNSOR's owners reacted to the decreased sales in the European market with 60 redundancies. These reduced by almost £1m the firm's expenses in 'wage and salaries' during that year and drastically changed the working patterns in UNSOR. In fact, the furnace started operating on night shifts only, and the workers not willing to work on night shifts were made redundant. Twenty workers between the billet

[138] Given that it melted its own steel.

mill and the rod mill were made redundant, whilst the other twenty were retrained to 'team-working' and to operate on one shift only. Their shift had to start half an hour before normal time and their break was reduced to half an hour[139]. In the grinding bay, the ten elder workers were encouraged to take 'voluntary retirement' and were replaced with five young workers (average age 26) willing to accept, in the words of the company's job description, 'flexible conditions of work'. The other redundancies involved three members of the staff, two accountants, the quality control manager and two workers at the nitrogen tank. In addition, 20 ancillary workers (bricklayers, plumbers, furnace cleaners) were made redundant, a few of them being re-employed by the firm as contractors during the summer 'shutdowns'.

Thus, when I arrived at UNSOR – in January 2000 – the workers were just adapting to the sweep of redundancies and to the changes that had been implemented on the shopfloor before Christmas. Because of this, they were extremely suspicious of me and sure that I was there to enforce the management's 'team-working bloody farce'.

In February 2001, Sir Brian Moffat, the new chairman of Corus and the Thatcherite chairman of British Steel who restructured the steel industry during the 1980s, announced 6,000 redundancies at Corus. On the following day the shares of Corus almost doubled and the business community announced the miraculous recovery of the Anglo-Dutch steel giant and forecast £25m profit by the year 2003. The appreciation of the business community and of the shareholders for Corus' job cuts had immediate repercussions on the steel market. In fact, Corus doubled the price of raw steel directed to the domestic market whilst cutting the price for special steel sold in the European market. For a short while UNSOR was able to raise the prices of its raw steel too, and concentrated on the strategy of producing high volumes of low quality steel. This strategy was the result of two factors. Firstly, Corus' cut in the price of special steel made UNSOR's sales of special steel in the European market unprofitable. Second, UNSOR applied for a bank loan, which was accorded on the condition that the company would increase its sales. Thus the strategy of concentrating on sales and quantity, rather than on quality and high margins, was, according to Mr. Garrett, 'imposed on us by the market'. As a matter of fact this was clearly the wrong strategy, given the low

[139] This was to avoid paying to the workers the 'shift allowance'.

productive capacity of UNSOR's plant[140]. During that troubled year, customers would suddenly change orders[141], debtors would disappear and creditors queued at the company offices to claim their payments. In March 2001, at the end of my fieldwork, the company's pension schemes were frozen and the firm went into administration. When I left UNSOR, the administrators had two weeks left to find a new buyer in order to avoid closure. In April 2001 the melting shop, billet and rolling mill of UNSOR were closed and the company reduced its operations to grinding and coating coils purchased from the small factory facing UNSOR on the other side of the hill. The new buyers turned out to be the old owners – Mr. Ambrose and Mr. Thorpe – who, thanks to the help from the ISTC and to a special aid package from the government, could afford to pay £6,000 redundancy to each worker and £15,000 to each manager, and to concentrate production on the small team of young and flexible workers in the grinding bay.

The production process and formal distribution of authority

UNSOR produces steel wires, billets and bars to customers' specification. The production process is divided between the HOT and the COLD departments (Figure 7). In the hot department the melting shop, billet mill and rod mills are clearly distinguishable. In the melting shop, steel scrap is gathered on the scrap ramp by the lorry driver and loaded into the furnace by the crane driver during the day. During the night shift, the 11 workers of the melting shop melt 348 ingots of steel in three heats and, during the day, the 14 workers of the rolling mill roll the ingots into billets on two shifts. After having been left in the cooling bank for at least two hours, the billets are checked and rough ground by the 6 workers at billet conditioning and sent to the rod mill. Chris, the quality supervisor, checks the chemical properties of the billets and their adherence to customers' specifications. In the rod mill, 20 workers roll billets into rods on two shifts. Rods are hardened in 'Lee Wilson's furnace' and left by the BOC nitrogen tank where they are cleaned. Some rods are coated by 5 specialist grinders ready to be sold in the market after Steve Cash, from the quality office, has checked them. Other rods are transformed into wires by the 6 workers at Lind's Bay (Bay 2),

[140] For instance, UNSOR's furnace has a melting capacity of 30 tons of steel, whereas the Corus furnace of 200 tons.
[141] This is a strategy often practised by customers when producers are in trouble. In fact, last minute changes in orders force the producer to sell at reduced price the goods that have been already made.

then coated and stored in the warehouse. Finally, most of the rods are strengthened into bars and ground by the 13 young grinders working on three shifts in Bay 3. A final quality check on the final products is made by the chemical engineer of the firm before they are packed and loaded by the fork lift drivers, weighed and registered by Mr. Garrett at the gatehouse, and driven away by Bob, the lorry driver. The auxiliary workers are Antonio and Jim (the fitters of the hot department), Steve and Tom (the fitters of the cold one), the three security guards and Craig, the cleaner. There are 14 members of staff: 3 accountants, 10 secretaries and 1 chemical expert.

In terms of formal authority (Figure 8), each shopfloor has a supervisor, with the exception of the melting shop where there are two supervisors, Tim and Roger. The melting shop is also the only shopfloor with a dedicated manager, Mr. Heaps. Lee Wilson is the manager of the hot department and Jeff Bowers is the manager of the cold department as well as the firm's general manager. The two supervisors of the hot shopfloors and the two fitters' supervisors report to Mr. Wilson on production and disciplinary matters, and Mr. Wilson reports to Mr. Bowers. On the cold shopfloor the supervisors report directly to Mr. Bowers, without the interference of any manager. The two quality supervisors report directly to Ken Ashton, the quality manager. The three health and safety representatives (one located in the hot department and two in the cold one) report to Mr. Garrett, the Health and Safety manager, and to the owners and the other managers during the company's monthly health and safety meetings. Mel, the die maker located near Bay 2, trains the operators at Lind's Bay in making dies for their shumags machines. Mel follows the customer specifications given to him by Steve Cash.

From a brief glance at the company's formal structure, two features can be highlighted. First, the supervisors in the cold department have broader discretionary power, given that they have the same formal authority as the managers of the hot department. Second, the hot department has two managers, whose competencies, authorities and perceptions of the production process, as will be outlined later, conflict with each other. Almost half of the workforce (51 individuals) is located in the cold department and the other half is equally divided between auxiliary workers (26), cold workers (19), and staff and supervisors (18). From the technical point of view, the activities of the hot department are strictly sequential and linearly interdependent, that is, the tasks performed at the 'bottom' of the production process can start only when the tasks performed 'at the top'

are completed. The speed of these activities is determined by the 'heating times' of the furnace and by the set sequences of the rolling mills. Whereas in the cold department, the finishing of rods into bars, wires and billets is partially independent from the production process of the hot department and the speed of production is dictated by the individual efforts of the grinders and by their pursuit of a bonus that follows the requirements of the market.

Wage structure and organisation of labour

In this section, I describe the health and safety regulations, the wage structure and the recruitment and training policies of UNSOR, forming the core of the company's formal organisation of labour.

HEALTH AND SAFETY

Early in the morning on my induction day, Mr. Garrett, the Health and Safety manager, recited the basic rules forming the core of health and safety awareness and gave me a small booklet where these rules were written. He then reminded me 'of the language of the crane drivers' and gave me a leaflet where this language was explained, suggesting to me that I should learn 'the language as soon as possible'.

After the hour-and-a-half-long induction course, Mr. Garrett gave me a red helmet and invited me to join Mr. Bowers – the general manager – for a survey of the shopfloor. As Garrett explained, the red colour meant 'visitor'. The company workers wore orange helmets and the contractors, white ones. Only later in my fieldwork did I realise that the managers wore red helmets too, and that on the day I first walked onto the shopfloor with Mr. Bowers, the workers thought that I was 'one of them'.

During my first day on the shopfloor, I used the company's health and safety rules to orientate myself in the midst of the unfamiliar noises, the deep darkness, artificial light and inexplicable bodily movements that animated the shopfloor. In fact, 'the red bar crossing a man walking' prevented me from falling into the furnace's pit; the yellow signal showing a fork lift driver helped me to avoid the frantic rides of the fork lifts, whose trajectories inexorably overlapped with mine and the yellow 'load' sign helped

me not to get frightened each time the gigantic shape of the crane, like a prehistoric vulture, seized my shade in the melting shop.

As my fieldwork unfolded, I realised that the 'knowledge' relating to health and safety was part of the workers' broader knowledge of the production process that had been passed from the shopfloor to the management. Besides, I realised that this knowledge – which, at the beginning of my fieldwork, increased my freedom on the shopfloor through safe working routines – enforced the owners' control over the production process. In fact, with time I noticed that the only machines that were locked were those of the grinders; that the nitrogen was not only a dangerous substance but also a very valuable one (in that its formula assured the competitive strategy of the firm); that beyond the 'confined spaces', underground tunnels and rooms were crowded with contractors; and that 'lone working' was encouraged by the company on the grinding bay only. In fact, in the monthly health and safety meetings between the two owners, Mr. Garrett and the ISTC Health and Safety representatives[142] (Charlie, Lind, Johnny, Phil), the owners and the workers confronted each other over health and safety issues and negotiated their control over the shopfloor in terms of 'back strains', 'sound thresholds', and stress-related high blood pressure. During these meetings, the owners would listen to the workers, the ISTC would intervene in the management's decisions and the managers would unexpectedly endorse the workers' positions.

As I have shown above, the company's business strategy was to combine high quality steel with large volumes of finished steel coils and bars. Both strategies relied on the work of the melting shop and of the grinding bay. In fact, the melters' knowledge of the 'properties of fire' assured high quality steel at the top end of the production process, whereas the grinders' knowledge of the coating process assured high quality at its bottom end. As the company increased its sales of finished coils and bars purchased outside the firm, the importance of the melting shop decreased and the strategic

[142] In UNSOR, only 30% of the workers – all in the cold department – are members of some trade union (ISTC). Following an agreement between ISTC and the company, the shop stewards are also 'health and safety representatives'. In the hot department none of the workers – in the past mainly GMB members – is in any trade union. When asked why didn't they join any union, the hot workers unanimously answered that the ISTC and the GMB had become too bureaucratic and that trade union officers had detached themselves from shopfloor politics. Thus the low rate of trade union membership in the hot department has to be read not as lack of political awareness, but as a sign of a way of conceiving politics as embedded in shopfloor dynamics.

relevance of the grinders increased. In what follows, I will show that the training system, the recruitment policy and the wage structure of UNSOR – as well as its already mentioned health and safety rules – reflected the attempt of the company to synchronise the flow of production to the strategic requirements of the market. That is, in order to combine the production of special steel for the aerospace industry and of barbed wire for fences, the owners empowered the grinders, slowed down the production in the two rolling mills and encouraged a friendly and self-managed style of work among the melters.

TRAINING

In UNSOR, the two main kinds of specialist trainings are the 'manual handling training' (the use of ground-operated and travelling cranes) and the 'fork lift truck driving training' both held by Mr. Garrett. Specialist training uncoupled the rhythm of production of the two strategic departments – the furnace and the grinding bay – from the production process of the rest of the company by making these departments autonomous from the auxiliary workers. For instance, the training of two labourers from the melting shop on the travelling crane allowed the company to operate the furnace on night shift, without having to pay overtime to auxiliary workers. Similarly, the grinders trained to move finished steel bars and coils with fork lifts and cranes without the help of auxiliary workers were more likely to be given precious overtime work. Specialist training also reinforced the supervisor's control over the workforce by giving him discretion in choosing which worker should be selected for the training. In fact, workers were generally willing to be trained as this increased their real wages (Figure 9) and their autonomy on the shopfloor.

Non-specialist training involved the implementation of team-working practices in the three departments where most of the redundancies had concentrated in the previous year: the billet rolling mill, the coil mill and the 'shumag' bay. Enforced by the department supervisor, 'team working' meant that sixty workers had to perform the same amount of work that was performed by more than one hundred workers before Christmas. Team working did not necessarily deskill the workers of these departments. For instance, the workers of the rod mill were quite happy to rotate between different machines as the tasks performed on each machine were incredibly boring. The impact of

team working on the workers' wages was uneven too. In fact, in the billet mill, production decreased steeply after team working was introduced and the department's bonuses almost halved; whereas in the 'shumag bay' team working increased production and the bonuses of the department. In both cases, team working allowed the company to adapt the production process to its strategy of maximising its finishing operations while slowing down the 'hot' activities of the melting shop and rolling mills, and to breach the workers' control over the production process. In both cases it involved cost cutting, but in the hot department these cuts were aimed at slowing down production, whereas in the cold one at intensifying it.

As I will show later, team-work created more divisions, contrasts and misunderstandings among the workers than co-operation. Sometimes, this was due to the fact that 'team-work' weakened the informal authority of the elder worker and his control over the production process. For instance, Charlie's loss of control over the allocation of overtime among the rollers created continuous contrasts and fissions in the group during the break-time. Sometimes, workers who had been performing the same task for several years found it impossible or stressful to rotate on different jobs. Thus if the practice of team-working increased the 'functional' and 'numerical' flexibility[143] of the workforce and the adaptation of the labour process to the capitalists' market strategies, it also fostered divisions, unexpected resistance and unintended inefficiency among the workforce.

RECRUITMENT POLICY

The recruitment policy of the company was very simple: to attract young and literate workers in the cold department, and in the hot department to select older and unskilled workers willing to work flexibly in the rolling mills and on night shifts in the melting shop. This recruitment policy was clearly reflected in the job descriptions drafted by the personnel manager. In fact, the only qualification required for the billet mill and coil mill operators was 'mechanical experience', whereas the ideal workers in the finishing department had to have 4 GCSEs, 'engineering experience', to be 'literate and

[143] For this point, see Pollert (1991) and Kelly (1995).

numerate' and under 40 years of age. (The workers at Lind's bay – less skilled than the grinders – were required to have 'physical strength' instead of engineering experience.) Besides, 'special requirements' for the cold workers were to be 'able to work in flexible arrangements', whereas for the hot workers, ' to be able to work in team' or 'on night shifts'. As a matter of fact, the average age in the coil rolling mill and in the melting shop was 45, whereas in the billet mill it was 40. In the cold department the average age was 30 in the grinding bay, and 35 at Lind's bay. The age differential was so important according to Keith Wilson – the manager of the hot department – 'that the two departments are almost two different plants'. Wilson often lamented to me that 'the elder workers are less flexible and less mobile and healthy than the younger ones' and that 'they think that this is a job for life, whereas they have to accept that the world is going flexible'. The recruitment policy of the company fragmented the workforce into the younger and more literate workers of the cold department and the elder and less qualified workers of the hot one. This fragmentation was also reflected in the company's wage structure.

Most of the workers of the hot department were recruited locally in Kiveton Park and Ashton – where they lived – through informal and familial networks[144]. Cold workers were generally recruited through the ISTC or through advertisements in the local paper and mostly lived in the ex-mining villages between Sheffield and Rotherham. The whole team of melters was recruited from Waleswood in 1994, when a small local melting shop closed down. Because of its common background and its established working routines, the group at the melting shop enjoyed independence in organising its labour and controlling its wage structure. This independence from the rest of the workforce increased when the furnace started to operate on night shift only and when – according to Charlie – they became ' a different tribe'.

WAGE STRUCTURE

'The wage structure of our firm is very democratic', 'Lady Bowers' (the personnel manager) told me one day in her elegant morning dress. In fact, a quick look at the workers' basic wages (Figure 9) seems to reinforce Lady Bowers' claim that the

[144] Several hot workers were related by kinship, for instance Charlie and Roger and Jim and Ash in the billet rolling mill; Phil and Ian in the furnace; Andy and Bill in the coil rolling mill.

company's blue collars were treated ' all the same', and that the economic divide between the hot and cold departments was 'a silly invention of some workers and managers'.[145] According to Lady Bowers, the 'democracy' of the wage structure was reflected in the fact that some of the 'more marginalised workforce', like cleaners and lorry drivers, earned more than the blue collars, and that in some instances managers earned only £20 weekly more than the staff and the supervisors. The only evident disparity was the high wage of the melters (£200/w) that had to be understood in the light of the fact that melters 'are a different kind of worker altogether' and that 'they are an old fashioned type of worker'.

Nevertheless, if the bonus system is added into the equation, the wage structure of the company drastically changes. In fact, the basic capacity of the two mills is linked to the furnace capacity of 348 ingots per week. Given the underutilisation of the two rolling mills[146], the average bonus obtained by its workers is very low (£90/w) and they have no hope of ever hitting the production target required for the maximum bonus of £180/w. Similarly, the real wages in the melting shop are lower than the nominal ones, given that it works 4 days only. In the cold department, the basic wage of the workers at Lind's bay increases by £180/w due to the bonus connected to their finishing of rods that the firm buys from outside. The grinders not only add a £180 bonus on top of their weekly wage, but they also receive an average of £45 extra per week, due to the amount of extra time work (an average of two hours per day) that they are allocated by the company. Looking at the basic wage level figures, a clear-cut stratification between owner-managers and workers (along the weekly income of £220) could be deduced. Nevertheless, in terms of real income, the company is fragmented along the two dimensions of ownership-management and hot workers-cold workers rather than polarised between ownership-management versus the workforce. Besides, the fact that some young grinders of the cold department earned almost twice as much as the elder workers of the hot department widened the conflict between the two departments and translated it into a generational conflict. More interestingly, the fact that managers, supervisors and members of the staff earned as much as the cold workers, created

[145] In fact, the grinders, wire workers, billet mill operators and furnace labourers have the same basic weekly wage of £180.
[146] It takes 18 hours to roll 348 billets in optimal productive conditions. Nevertheless continuous breakdowns at the rolling mills reduce the effective working time of the rollers to 45%. That is to say, every week rollers are out of work 22 hours on 40.

unexpected solidarities between the former and the 'peripheral workforce' (for instance, with the furnace labourers) in the hot department. Finally the high wages of the fitters, as I will show later, has to be related to their role in adapting the flow of production and the productive capacity of the HOT department to the requirements of the owners. In fact, the fitters disappeared from the rolling mills when the company started buying coils and bars, thus leaving the shopfloors paralysed when the rolls broke; they claimed electrical failures at the furnace when its electricity costs absorbed excessive company cash flow and reduced health and safety investments by mending broken chains and old ladders on the shopfloors.

In conclusion, the firm's wage structure and labour organisation reflected the economic strategy of progressively externalising the melting and rolling of coils and concentrating on their finishing. Productively, the company achieved this goal by underutilising the hot department and overstretching the cold one. Politically, it achieved it by segmenting the workforce into the literate, young and well-paid workers of the cold department, and the less qualified, older and badly remunerated workers of the hot department.

The EAF (Electric Arc Furnace[147])

I spent my first night shift at the melting shop – an immense space approximately 200 metres long and 50 metres high – learning how to deal with its dangers. In fact, on that night Phil and Dave – the two melters – pointed me to the workers' escape routes in case of furnace explosions (strangely inconsistent with the HAZARD signals placed on the shopfloor by Mr. Garrett), and the best position from which to look inside the furnace without getting blinded; they explained the meanings of the beeping of the cranes; the correct way of walking on the slippery floor by the furnace; and how to face the different 'moods' of the fire inside it, corresponding to different stages of the production process. Thus, I learnt that the fire is 'sleepy' at the beginning of the shift, 'tense' when oxygen is pumped, 'violent' after the second scrap charge, and 'killed' after the second slagging off. In fact, the main task of the melters, is to 'kill the fire' during each heat and to control its dangerous reactions to the alloys, oxygen and lime that they mix inside it.

[147] **Film time code: 27' 47" - 31' 30"**

The two main features of the melting shop are the immense scale of its machines and the danger of its operations. As a result of the big scale of the objects (ladles, baskets, furnace, moulds) located on the shopfloor, the workers cover the vast distances between them incredibly slowly, move them only by pooling their efforts together and communicate about them always from the distance and with movements of their hands. The scale of the danger of the operations reinforces the workers' feeling of slowness and inadequacy. Because of the big scale of the objects used by the workers, social and mechanical interactions mingle together in the melting shop and the workers' movements are heavily constrained by the mechanical trajectories of cranes, fork-lift trucks and pumps, and centripetally organised around the furnace.

A normal day at the melting shop

The activities of the melting shop start in the morning when Mr. Heaps collects the orders from the quality department and writes the list of alloys and scrap required for the night's heat on the blackboard of his office. On the blackboard, he also writes in red the expected costs of electricity and of the scrap for the day. The supervisor reads the notes on the blackboard and gathers the alloys by the furnace for the night shift. The crane driver starts loading the scrap basket in the morning. 'A good job at the crane makes 90% of a good heat' according to Dave the crane driver. Dave grabs the scrap from the crane with a huge magnet that attracts smaller scrap dust, razor blades and copper wires that fall back from the swinging chain of the crane onto the ground creating a dense metallic rain on the melting shop during the morning. At the end of the afternoon shift (4 p.m.), the scrap basket is ready and the piles of alloys to be used during the night are lined by the furnace. The night shift starts at 8 p.m. when the three labourers prepare the moulds inside the pit and the melter switches on the furnace. The pit is about 15 metres long, 3 metres wide and 2 metres deep. Dave and Ian lay heavy steel plates at the bottom of the pit and fit hollow-squared refractory tiles into long pipes around the four runs of the bottom plates by hand. They continuously climb into and out of the pit hole with piles of tiles and wet clay in their hands. The clay is made in a corner of the shop, mixing Buxton clay with freezing water. With the help of the crane driver, moulds are stood up in the pit, narrow end down, and fitted onto the clay pipe. Thick linings of clay and sealing around the joins are made by hand by the labourers,

who balance themselves by shifting the weight of their body between the leg on the ground and the leg on the mould. It takes four hours for Ian and Dave to lay 28 moulds inside the pit hole, while Ferrell and the crane driver strip the other half of the pit hole of the moulds of the previous night, striking the moulds against an old heavy ingot in order to knock out the ingot sticking inside it.

Phil, the first hand melter, starts his job by checking the condition of the refractory bricks inside the furnace, and the functioning of the furnace roof. Then, he directs the work of the crane driver and makes sure that scrap is not charged too quickly, thus damaging the electrodes and altering the heat times and the levels of energy consumption of the furnace. After the two halves of the bottom of the scrap basket have opened, like small insect wings, and the deafening explosions of steel inside the furnace have started, Phil controls the temperature of the furnace, by sticking a long and heavy pipe inside it and looking at the red numbers that appear on the quartz thermometer hanging on the shopfloor. Then, he empties the slag cabin by lifting the thick steel plate – that is, the floor surrounding the furnace – with the help of the crane driver. During this operation, Phil directs the chain of the crane while suspended over a red mountain of solid slag whose heat suddenly crosses his face with red flushes and trickles of sweat.

At 10 p.m. the second-hand melter (Dave) arrives and they start injecting oxygen into the furnace with a long pump that they fit in the opening of a steel screen behind which they hide to protect themselves from the 'spits' of the furnace. While the oxygen injected purifies the steel inside the furnace, thick yellow clouds of released silicium join the black smoke and the bright sparks outside the furnace, whilst inside it steel impurities gather into a solid crust (slag) floating on the top of the melting steel. As the carbon content of the steel rises, the movements of the steel inside the furnace become unpredictable, violent and abrupt, and sparks and heavy drops of steel increasingly overwhelm the melters' bodies. By shovelling limestone into the furnace, the melters increase the slag 'like a sponge', and when this latter acquires its 'dirty white colour' and 'crusty' consistency, they extract it from the furnace. With no screen between them and the open door of the furnace, they alternate in front of it until the strong heat – gathering in the form of smoke on their faces and bodies – pulls them back aside. Once they have broken the heavy crust of slag on the surface with long pointed bars, liquid slag pours inside the slag cabin.

When the wooden end of the slag bar has burned, they start shovelling alloys into the furnace, their thick blue protective clothes, green anti-dazzle screens and asbestos gloves shielding their bodies from the rain of steel drops under which they disappear. They load the shovel, weigh the alloys and throw them inside the furnace, standing, in turn, in front of the fire, and departing from it, following circular trajectories in order to avoid each other and the 'spits' of steel. The quantity of each load, the level of the bath and the 'holes' inside the boiling steel where the alloys have to land are constant worries during the 'shovel dance' that overlap with the worries for the trajectories of the furnace's spits and with the activities of the crane drivers from above. In fact, the second scrap charge alters the bath level and composition, creates uneven masses within the melting steel and often obtrudes from the furnace roof. After the second charge, oxygen must be injected again to melt the steel with the new scrap, new lime must be added and a second slag off performed to stabilise the level and quality of the bath. Normally at this stage, the current is switched off, the roof opened and the melter climbs on the ladders of the furnace to observe from above if the scrap is altering the bath or damaging the brick lining. In order to calm the bath, the second-hand tilts the furnace laterally while the first hand observes the movement of the scrap inside the opened furnace.

After the second charge, Dave and Phil start their close observation of the surface and colour of the bath, the noise of the boiling steel and the height and density of the smoke in order to assess the carbon content of the heat. The second method to assess the carbon content of the heat is to deduce it from the electrodes' absorption indicated on the panel control inside the room. But rather than deducing the 'thickness' of the steel from the electric panel, they prefer the inductive methods of observing its movements inside the furnace.

After the last ten tons of scrap have been released into the furnace, Phil and Dave's discussions about the colour, density and movements of the steel inside the furnace increase, together with their small adjustments of the level and composition of the bath with further shovelling of alloys and lime. By this time, the fire is 'killed' and the movements of the steel inside the furnace are predictable and dispersed in long horizontal waves; its noise is low and rhythmical and its colour, almost white, 'like

milk'. The supervisor comes out from the small room overlooking the furnace and takes a sample of steel by plunging a pipe inside the furnace. If the sample is taken too superficially, the reading of the carbon content is inaccurate and for this reason Phil and Dave never trust the results of the laboratory and rather prefer to assess the carbon content by looking at its crystalline texture. The supervisor quickly walks to the laboratory, cools the round piece of steel, grinds it and inserts it in the 'polivac' machine that reads the carbon content of the steel by refracting waves of light on its surface. The readings of the test are automatically transmitted to the computer on the small desk of the empty room of the melters where orders, customer specifications and heat tests are recorded for the quality control department. When the steel is ready, (usually around 12 p.m.) Phil activates the alarm, the crane driver lowers the ladle into the furnace pit and Dave tilts over the furnace so that the molten steel runs out into the ladle. When the temperature of the furnace is over 1600°C, the molten steel flows slowly into the ladle; when the temperature is around 1500°C it quickly disappears inside it. The labourers look at the molten steel running into the ladle in silence, trying to guess the quality of the heat from the colour and consistency of the falling steel. For a few seconds, the whole workforce stands still.

After the tapping, the crane driver carries the ladle over the first cluster of four moulds. The pit-man operates the handle to release the stopper at the bottom and the molten steel flows out through the clay pipes and into the moulds from the bottom. When all the moulds are filled and sparkle with small flames on their surface, the labourers run to the corner where the clay is lined up, load two bags of sand and clay on their shoulders and throw them into the bottom of the pit to prevent the moulds sticking on the pit ground. For every bag thrown into the pit a small explosion covers them with sparks. The labourers wear T-shirts only and, not used to sparks, during this phase move awkwardly back and forth, bumping into each other, laughing and swearing.

After the first heat, the melter checks the brick lining inside the furnace and the state of the electrodes; the labourers re-start laying new moulds and stripping the old ones; and the crane drivers begin to gather scrap with the big magnet. The second tapping takes place at 3 a.m. and the last one at 6 a.m., when orange rays of sun and a cold wind extend on the melting shop from the big holes in its corrugated aluminium walls.

'That's the best time of the day', according to Ian, 'when I walk home at dawn and go to bed'.

'Every heat is like a good-looking woman'

My apprenticeship at the furnace started as 'a game' between Phil and I, and as a kind of re-enactment of the past formal apprenticeships in the melting shop. Until the 1980s, the apprenticeship of the melters would last several years and it would take up to 30 years for a helper to become 'first-hand' melter. The slowness of the melter's career was rewarded by his power on the shopfloor that consisted in negotiating the price of each heat directly with the manager; distributing the labourers' wages discretionally at the end of the week; planning their breaks and tasks; and fining them when they showed up late, unshaven or drunk by the pit hole.

I started my apprenticeship by sweeping the steel pavement of the furnace after Phil had shovelled lime and alloys inside it. This task helped me to adapt myself to the behaviour of the steel during the different productive phases, to locate the safe spaces where I could retreat during violent explosions, to avoid and follow the trajectories of Phil and Dave in the squared space between the steel screen, the furnace and the panel room, and to be aware of the value of the small particles of dust of alloys and lime that got lost during the melting process. When I started helping Phil to empty the slag cabin, I realised the importance of finding the centre of my body on the slippery floor of the furnace, and of avoiding thinking of the consequences of a fall into the hole filled with red slag. By re-ordering the thermometer, shovel, gloves and slag bars by the furnace, I realised that their locations reflected the sequence and priorities of the tasks performed during the melting process, and by plunging the long thermometer inside the furnace, I started to connect the colour of the steel inside the furnace to its temperature. Thus, I could recognise that steel was 'blood' and 'cherry' (700°C) before the first charge, 'orange' and 'yellow' (1000°C) after the second one, and 'dirty white' (1500°C) when ready to be tapped.

When Phil directed my movements in front of the open furnace to teach me how to slag off, I memorised the right angle to use in order to collect as much slag as possible and the smooth rhythm I had to follow in order not to 'upset' the steel thus making it boil

dangerously. In fact, when the steel started to boil inside the furnace, it 'got burned' and thus the heat was 'fucked up'. In this instance, I learned that when the steel is upset there is nothing you can do but calm it down with gentle movements. In fact, escaping from the furnace is not only dangerous (in fact 'you should never turn your back on the furnace'), but it also increases the uncontrolled energy of the steel, ultimately leading to violent explosions. According to Phil 'every heat is like a good-looking woman: capricious, unpredictable and time-consuming' and a good melter has to be patient and firm and to transmit self-confidence to the furnace and not be dominated by her capricious wills.

The two main operations through which the melters alter the chemical properties of the steel are the pumping of oxygen and the shovelling of alloys and lime. Oxygen reduces the content of silicate in the steel and increases its carbon content. The addition of lime gives more body to the steel and stabilises its chemical structure. From the point of view of 'weight', special steel is lighter and more unpredictable, whereas ordinary steel is heavy and reliable. Thus, the melting of special steel for the aerospace or engineering industries always involves hard and dangerous work, whereas the melting of ordinary steel is a routine job. When I started shovelling alloys and lime inside the furnace, I could notice the changing consistency of the steel inside the furnace, infer its carbon content from its weight and colour and, with time, I was able almost to guess which company would buy the steel we were making. Finally, dark yellow clouds of silicate gathering around the furnace and irregular noises of electrical blasts confirmed that special steel was being melted, whereas thick and black clouds and rhythmical sounds of liquid waves made me realise that low quality steel had been ordered from the wire-making firm across the road.

Alloys are generally added according to the production schedule drafted by the quality control department, but Phil and Dave often diverge from it following their 'inner instinct'. In fact, Phil and Dave's idea of 'a good heat' often conflicts with the need to save on electricity costs of the EAF (Electric Arc Furnace) manager, Mr. Heaps, and with the quality department's need to standardise the customer specifications. Often Mr. Heaps and Phil argued on the shopfloor about how to deal with specific heats, the former being concerned to meet production targets in the most economic way, and the latter, to make a good heat without damaging the furnace. In fact, in terms of the formal

responsibilities defined by the company's job descriptions, the melter is responsible for the state of the furnace, whereas the supervisor is responsible for the composition of the heat meeting the standard specifications of the quality department. Thus, the main concern of Mr. Heaps is to save electricity costs sometimes at the expense of the furnace and the melters' safety. For instance, Mr. Heaps often pressurises the crane driver to load more than 10 tons of scrap in the basket for each charge, whereas Phil considers this suggestion 'irresponsible' because excessive charges damage the electrodes. Similarly, when a heat is taking too long, Heaps increases the voltage of the furnace, without care for the fact that high electricity prevents slag formation and therefore leaves unwanted impurities in the steel (nevertheless with low quality steel, the situation reversed, Phil wanting to speed up the heat, and Heaps wanting to keep the electricity costs low).

Phil and Dave's concerns for the refractory bricks and the electrodes of the furnace, and their awareness that a 'good heat never boils', lead them to seek stability in the heat mainly by adding limestone in the bath. Whereas Heaps' concerns for the electricity costs lead him to use the furnace's power unevenly (high with high quality steel and low for low quality) thus damaging the electrodes and making the steel more dangerous to work (and according to Phil 'always at the edge of 'being burnt'). The quality department sets its standards on the base of market requirements and translates these into the chemical 'standard' of the steel, without paying attention – according to Phil – to its inner structural transformations during the melting process[148]. According to Phil 'hardness and resiliency' cannot be set with an a priori standard of carbon content, because the character of each heat is unique and un-reproducible.

In conclusion, the melters' knowledge of the production process and their 'visual, sensimotor and aural' control over it (J. and C. Keller, 1996), contrasts with the manager's concerns for costs and his control over the furnace's temperature. Besides, the melters' method of assessing the quality of the heat contrasts with the marketing concerns of the quality department and with the standard assessment procedures connected with the use of the 'Polivac' machine. In the next section, I will show that during the break-times the conflict between the manager and melters regarding 'what a

[148] On the contrast between craft metallurgists and chemists, see Misa (2000).

good heat is' is transformed into a contrast between on the one hand the melting shop and the rest of the company, and on the other hand one between the melters and the labourers.

'When melters were gods..'

There are two break-rooms at the melting shop, one for the labourers (the same break-room as for the rollers) and one for the two melters and the supervisor. The break-room of the melters is an empty room with a desk on which the company computer and a kettle face each other at the two opposite corners. The room overlooks the furnace with two big windowpanes, one of which is protected by a steel grate, constantly hit by the sparks coming out from the furnace. The heavy panel near the side window displays the levers to tilt the furnace and to open the roof and the electricity switches and indicators. From the panel, the melter can look at the back of the furnace through a lorry window mirror. In the opposite corner, the two lockers of the melter conceal their 'civilian clothes' and the pornographic magazines that migrate on the melting shop as the night shift unfolds. By the desk, there are three chairs for Phil, Dave and the supervisor (Roger). But more often the supervisor's chair is occupied by Mr. Heaps. Mr. Heaps – married for 40 years and with no children – often pops into the melting shop at night from his home, in slippers and with tousled hair, 'to stay with the guys' and 'to control the heat'.

Heaps has a very special relationship with the melters with whom he shares the same memories of the past glories of the steel industry, 'when melters where gods'. Mr. Heaps started his career in the R&D department of Firth Brown more than forty years ago. Later, he decided to be trained in metallurgy and became manager in one of the firm's melting shops. In fact – Heaps told me one night while distractedly glancing at a hard-core transsexual magazine – 'even if I was a metallurgist and a theoretician, I have always thought that the work of the guys on the shopfloor was more important than the work of the managers'. When he was a young manager, he was especially attracted by the melters' 'sense of dignity and elegance' – 'at that time, the 1950s, the melters used to have domestic servants and they arrived on the shopfloor in white scarves and bowler hats' – and by their ability to enforce discipline and a 'sense of hierarchy' on the shopfloor. Phil agreed with Mr. Heaps about both. In fact at that time (1960s) ' melters

were like gods, if they didn't want you at the furnace, you had no choice but to leave. They decided the wages, rewards and punishments for the furnace-men'. 'When melters were gods', Phil went on, 'all the women wanted to marry them and all the girls to go out with them. We were all Rockers, and when we parked our motorbikes in the company car park and the quiff came out from the helmets, the company managers would turn their eyes away'.

Regarding UNSOR, Phil, Dave and Heaps agreed that there were three major problems in the company. First, the owners were completely uninterested in its long- term future but only wanted to make 'easy money and run away'. In fact, the company strategy of abandoning the quality market to increase the sales of ordinary steel was clear to them in the increasing amount of ordinary steel that had been melted recently. This strategy, according to Heaps, drew company money into the cold department whilst leaving the hot department underutilised. Heaps thought that the 'young chaps' of the cold department were inexperienced and unqualified, and that the company's reliance on their 'poor skills' was irresponsible. Phil commented that the cold workers use only their hands and 'don't put brains into their job', and Dave dismissed them as 'spoiled kids'.

The second problem, according to Phil, was that 'the managers have their arse stuck on their office chairs and they never come down here'. Mr. Heaps shared Phil's distrust of the company managers. Especially Mr. Bowers, the manager of the cold department, was completely unfit, according to Heaps, for the job of general manager given that he had spent most of his professional career drawing machines in the offices of British Steel. Bowers was given such an important position at UNSOR because he stole from British Steel the chemical formula for coating wires and because on this formula the company is now profiteering. But Bowers' 'engineered mind' confuses the workers and paralyses the shopfloor, according to Heaps. Also Ken Ashton, the quality control manager, according to Heaps was suffocating the company with concerns about the standard costs of the 'heats', especially insisting that the electricity costs of the furnace were excessive. Ashton 'is a marketing man' and his idea of the quality of the heat in terms of customers' specification doesn't reflect 'the way the guys work here'. Heaps didn't like to have lunch with the other managers in the company canteen, didn't approve of their habit of having company cars paid for with the workers' money and of

their six-figure wages irrespective of the firm's financial situation. Since last December, when the guys had been forced to work on night shifts only, Heaps had decided to pop in more often and 'spend more time with them' on the shopfloor and had agreed to link his wage to the output of the department 'like all the other workers', thus effectively decreasing its real value.

The third problem was the discipline of the labourers in the melting shop. In fact, Heaps confidentially revealed to me that 'they cut corners, drink on the shopfloor and have no respect for Phil and Dave'. Phil, more simply, claimed that 'they are afraid of the fire' and that 'they prefer to do a donkey's job, rather than hard stuff'.

'Welcome to the donkeys' house'

'Welcome to the donkeys' house', shouted Armstrong ('the missing link') when he saw me on the doorstep of the labourers break-room one Thursday morning at 4a.m. Farrell, Ian, David, Jack and Roger were eating around the table of the dark room overlooking the golf ground. Red, tired eyes framed with grey-brownish faces looked at me with surprise and amusement. 'How is your melting course going?' Armstrong cried loudly. Farrell laughed, spitting some of the beans back onto the toast. 'Have you decided to sleep with us tonight?' Ferrell went on, 'we are better at it than the melters, you can bet'. The jokes, the smell of beans, fags, eggs and tomato soup and the loud music resounding in the obscurity of the room strongly contrasted with the breaks of the melters with their peaceful conversations about the heats, and the red light constantly glowing through the glasses during their sleeps. In fact, the labourers took advantage of their half-hour breaks by having fun, whereas the melters spent their two-hours breaks resting. Unlike the melters' break-room, the labourers' room is located outside the shopfloor and faces the fields where Nene' (the security guard's dog) chases rabbits and foxes at night. In this room, they are free to laugh at the conflicts between Mr Heaps and Phil regarding the furnace's temperature and to show their contempt for the 'hierarchical mind' of the melters and for their ambition of replacing the owners 'in the company businesses'.

Middle aged, married and with children, the labourers are generally aware of their low status in the company due to their low wages (in fact, the lowest wage at UNSOR), the unskilled nature of their jobs (in fact, formally the only semi-skilled jobs in the firm), and the fact that they are the only employees of the firm to work at night. Most of them having worked in the steel industry for more than 30 years as unskilled labourers, they happily accepted the company's offer to work as unskilled labourers in the UNSOR melting shop. In fact, this job allows them to have a second job during the day and for this reason they often arrive by the pit-hole already tired and sleepy. During the fieldwork, they got used to my presence in the break-room and slowly disclosed to me – in the words of 'the missing link' – their 'philosophy of work'.

'The whole story', Armstrong told me one night, 'of the danger of the furnace is an invention of Mr. Heaps and the two melters to control the melting shop, raise their wage and exploit us'. The labourers were aware of the fact that the owners and the quality department were pushing the melting shop to produce low quality steel faster and more economically, and they fully endorsed 'this philosophy of work'. 'Who do they think they are?', Farrell joined the discussion. 'Only because they stand in front of the furnace, smell a bit of smoke and get a few scars, they think that they can run the business!' Dave, the crane driver, who couldn't avoid noticing that 'from up there their job looks very dangerous', was abruptly interrupted by Ferrell. 'The more steel we produce, the more we earn. To us it makes no difference if the steel is special or ordinary. On the contrary, scrap steel saves us labour, whereas with special steel we have to reinforce the seals on the moulds, put extra clay on the pipes, sweat to strip them out and spend an extra hour loading the scrap basket'.

When I replied that 'Phil and Dave like doing a good job', Amstrong disapprovingly rebuked me. 'A good job is a job where labourers don't sweat blood'. And he went on with his complaint that 'Phil is more concerned with the bricks of the furnace than with our safety. On that shift when Ferrell fell into the pit hole, Phil kept on watching the furnace lining as if nothing had happened'. 'Ferrell was bloody drunk!' Roger joined the conversation. Farrell laughed, soup trickling out of his mouth. In spite of being supervisor, Roger enjoyed spending his breaks with the labourers. Roger is 53, married with two children and comes from a family of three generations of steelworkers. Roger started in the melting shop of Firth-Brown with Mr. Heaps, at the time his supervisor.

Roger doesn't like talking about his private life, and in fact, the details of Roger's life were revealed to me by Mr. Heaps during one of the breaks with the melters. 'When Roger was sacked without explanation at the Firth-Brown melting shop, he started drinking. I lost touch with him, but one day I met him in Sheffield. He looked drunk and unhappy. He was searching in the dustbin. I went closer to him and asked him if he wanted to start working again. He accepted and promised that he would stop drinking'. Roger agreed with Ferrell and Amstrong that Phil and Dave were 'too hierarchical' and that they controlled the melting process too tightly. He also thought that Phil and Dave were acting too dangerously in front of the furnace and that their old-fashioned practices of labour were slowing down the company's profitability. 'For God's sake', he cried with an abrupt change of tone, 'Phil thinks he can read the carbon content of the sample better than the bloody polivac'. 'I like it here', he concluded with a warm expression, 'the guys are unpretentious but they really work hard. Having a laugh is the only way to avoid going crazy with our donkey job! But they can really help you if you need it. Maybe donkey jobs make people more friendly, maybe donkeys have learnt to go around in group...'(he smiles).

As the fieldwork unfolded, the tension between the labour of Ferrell, Amstrong and the others and the work at the furnace, between the jokes of the former and the knowledge of the melters, and between the boredom at the pit-hole and the danger by the fire, increased. In fact, the company's decline had increased the differences between the 'philosophy' of work of the 'gods' and the philosophy of work of the 'donkeys'. By philosophy of work, I mean a mixture of knowledge of the job, personal history, subjective view of the relations between labourers and owners, family background and understanding of the political dynamics taking place on the shopfloor. All these elements – which Amstrong calls 'philosophy of work' can be summarised with the workers' notion of 'what a good heat is'. For the melters, a good heat is a heat that meets customer specifications without damaging the furnace. For them, a good heat involves continuous 'listening' to the fire's responses to their operations; a sensuous addiction to the waves and sound of the boiling steel; the conservative attitude of taking for granted that history repeats itself and that 'fire' is an immutable element, a universal technology; and a 'heroic' attitude towards danger.

If for the melters 'a good job is a hard and regular job', for the labourers 'a good job is an easy and slow job'. Labourers stay away from the fire, avoid responsibilities and danger and they never make extra efforts or take extra risks. The labour-intensity of their job requires continuity of efforts, minimal external sensory stimulation and no serious reflections or dangerous efforts. 'Donkeys' prefer a 'boring' job rather than the risky business of the 'gods'. Finally, for the management a good heat is a cheap one: the quality department tries to minimise standard costs; Mr. Heaps, to minimise electricity costs; and the owners, to maximise the sales of 'cheap', low quality steel. By a strange irony, the 'donkeys' continuous attempt to save labour effort coincided with the management and the owners' interests in cutting labour and production costs and stabilising production standards by increasing the melting of cheap steel. As UNSOR melting shop focused on the melting of low quality steel, thus shifting into a market in which it had no chance of survival, the 'gods' fell from the sky and new machinery was brought into the melting shop.

'The end of an era'

'It's the end of an era, Mao', Phil told me when I arrived at the melting shop one evening in December 2001. A 5-metre-high aluminium cube was standing in front of the furnace grinding alloy powder and injecting it into the furnace. The new machine had been invented by Mr. Heaps, and drawn and built by an engineer friend of his with the help of a small grant from the Rotherham Chamber of Commerce. 'Funnily enough, Max, the idea was given to me by Phil', he told me while the engineer directed Antonio and Jim (the fitters) on how to fit the wires in the machine. Heaps went on : 'One night Phil suggested to me that they could use a hand-operated pump to inject the alloys into the furnace, like the oxygen one. Phil also suggested grinding down the alloys into powder so that the load of the alloys wouldn't damage the pump and that this latter could be easily operated by them'. When he was going to bed that night, Heaps realised that the alloys and the lime could in fact be injected inside the furnace with a bigger pump that would 'save the guys from dangerous work'. Having made the appropriate calculation, Heaps discovered that powdered alloys were in fact 30% cheaper than the unrefined ones, that the weekly electricity costs of the pump were well below the weekly wage of a melter, and that the machine would allow the making of four heats per night with the 'same amount of electricity consumed with the actual three heat system'.

The aluminium cube in front of the furnace gave rise to mixed reactions among the workers. The fitters were amused by the fact that the new machine always broke down. The labourers laughed at Phil and Dave's awkward movements around the machine and nicknamed it 'Phil's big brother'. Heaps was convinced that the machine 'will change forever the way business is made in this country. In fact, it will allow small producers like us to produce high quality steel with low capital'. Phil, who in the beginning had welcomed the change, was now lost in front of the furnace. In fact, the metallic tower obscured him from the view of the crane driver and of Dave, so that he had increasingly to rely on me – standing at the side of the furnace – to communicate with both of them. Second, the machine prevented them from moving freely in front of the furnace, where they still had to shovel some alloys and barred them from the safe spaces where they would retreat when explosions occurred, and during the 'bad moods' of the furnace. Thirdly, according to Phil, the machine had disastrous consequences on the quality of the steel. In fact, it prevented frequent checks of the bath level, slag formation, oxygen and carbon content. Finally, in the long run the machine would damage the furnace as it made frequent checks of the furnace lining, roof and electrodes impossible.

Concluding remarks on the EAF

The melting shop enjoyed autonomy from the rest of the firm and relatively high wages if compared to the wages of the rest of the workforce of the hot department. Following old patterns of labour organisation, the shopfloor was informally supervised by the melters and hierarchically organised around their knowledge. The autonomy of the melting shop from the rest of the company was reinforced by Mr. Heaps' peculiar managerial style. Paternalistic with 'his guys' and conflictual with his 'peers', Heaps disguised his authority on the melting shop through the authority of the melters and his informal style of management allowed him to capture Phil's knowledge of the melting process and ultimately to deskill the melters.

As I have shown in this section, the knowledge that the melters use during 'a normal melting day' is too complex to be substituted with such labour-saving machines as the aluminium pump or with such capital-intensive machines as the polivac machine. In fact,

the results of the tests of the polivac machine are unreliable compared to Phil and Dave's folk classifications that 'when the steel is cherry red, it means that the temperature inside the furnace is 700°C'[149], or that, 'when the smoke coming from the furnace is yellow, it means that the steel that is being melted contains high carbon content', or that, 'fine grains of the steel samples mean high quality steel'. Similarly, by pumping alloys automatically into the furnace it is impossible to melt high quality steel because this latter requires the alloys to be added incrementally and in co- ordination with a variety of small operations and assessments normally performed by the melter in front of the furnace.

The division between the knowledge-intensive tasks of the melters and the labour-intensive tasks of the labourers was interpreted by the melters in terms of conflict between 'capital' and 'labour', and at the broader level of the company as an economic conflict between the 'capital intensity' of the melting shop and the 'labour intensity' of the cold department. Thus, the decision of the quality department to decrease the capacity of the furnace was widely accepted by the workforce. In fact, the labourers read it as a legitimate attack on the melters' status, whereas the cold workers, as an empowerment of the finishing end of the production process.

The Rolling Mill[150]. A brief commentary on Charlie's essay on the 'Seligman dogs'

'Karl Marx (1818-1883) argued that alienation of the workforce was 'orchestrated' by the capitalist system. It was Marx's belief that work was of primary importance. 'Since work is a social activity', Marx argued 'that alienation would thus include alienation from others', italics cited in Sociology Themes and Perspectives, Haralambos and Holbron, page 179.

Although a rather controversial statement in some circles, the truth of alienation at Unsor Steels is a worry. Like the Luton car workers, alienation doesn't appear to be a worry to the workforce; instrumentalism appears to be the accepted norm.

'Men make their own history, but they do not make it as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given and transmitted from the past'.
Marx, as cited in Sociology in Perspective, page 27. N.B. Underlining added.

In conclusion: that the gap between the workforce and the directors/owners has widened during the last ten years, is a sadly true statement. The company had operated a policy of alienation. The opinions of the workers are not valued, inputs are unwanted and also frowned upon. Through all

[149] Blacksmiths in Sheffield (Trevor and Duke) use the same colour/temperature classification used by Phil and Dave. The same classification is also used by the American blacksmiths described by Keller and Keller (1996).
[150] **Film time code: 31' 31" - 38' 51"**

the problems of past redundancies and hardships, dialogue between employer and employee has been minimal. This is almost an infantile approach. With the advent of globalisation, Unsor Steel is just but a minor interference for the large multinationals. For the company to survive, work relations need to be revived. Building up a trusting relationship and closing ranks with the workers would only be beneficial to Unsor'.

Charley Mozley, Sociology Course, Rotherham College.

This extract is taken from the essay that Charlie wrote for the sociology unit of the part-time nursing degree that he was doing at Rotherham College. Sociology studies really fascinated Charlie and he often reviewed his notes and browsed through books and extracts while rolling the ingots. When our encounters on the shopfloor developed into friendship, Charlie told me of his project to 'study alienation'. His idea was to link the knowledge he had gathered in the sociology unit of the degree with some studies on 'human behaviour' he had came across in the psychology unit to explain why his 'working mates' were alienated. In fact, according to Charlie, Marx' idea of alienation is too objectivistic (in fact 'it is not true that people doing the same job think in the same way'), and too 'functionalist' ('in fact it is not true that people have to starve in order to help each other'), and he thinks that 'alienation' has to be studied more from the point of view of individual psychology than from the sociological point of view of class. Charlie was especially interested in human 'contradictions'. For instance, why don't the owners run the rolling mill efficiently and safely? And why do the workers seem to appreciate the owners' lack of concern for investment and the ordinary maintenance of the rolling mill?

Charlie thought that the work of Martin Seligman on 'Learned Helplessness' (1975) well explained the alienation of his working mates. This is a short extract from Charlie's essay for Rotherham college.

'Martin Seligman and associates carried out a series of experiments on dogs, these experiments provided evidence that a state of learned helplessness could be instilled. A summary of the experiment is outlined below.

Firstly, a group of dogs were strapped in harnesses, the dogs were then administered a number of electric shocks lasting five seconds (it must be noted that the electric shocks were inescapable). After a 24-hour period, the dogs were placed in a box, avoidance learning was needed to minimise pain from further electric shocks. The dogs were given a 10-second warning via signal; if a barrier was not jumped over, the dog would receive 50 seconds of painful shock. Even when the experimenter physically showed the dogs how to escape, the dogs remained passive. Some dogs had to be forced over the barrier some 200 times before learned helplessness was extinguished.

The outcome of the trial that is of interest to myself is that no opposition was apparent from the dogs, which were experimented on; in effect they had became passive. They had the inability to

assert themselves. Although the means of escape were obvious they were unable to declare their intentions of escape. Lastly, they appeared defenceless to their surroundings; in effect helplessness had been induced from an exterior source, in this case the experimenters. It is my belief that this state of helplessness exists amongst the Unsor workers'.

According to Charlie, the 'electric shocks' that reduced the workers to passivity were contained in the very layout of the shopfloor. In fact, according to him, the messy shopfloor and the boring and dangerous work of the rolling mill were like small electric shocks to which his mates had adapted. Charlie thought that his mates had adapted to the danger deriving from the obsolete rolling mill, the mechanical faults of its bridge and the cracks in its rolls, and the polluting aluminium powder and soot scattered on the shopfloor through 'escapism', that is through jokes and dangerous working practices that made time pass faster. Curiously, the more the rollers tried to escape their poor working conditions in this way the more they got stuck on a 'messy' shopfloor where work was dangerous and boring. The fact that the rollers consented to the capitalist exploitation by playing dangerous games, adds a small variant to Burawoy's hypothesis that capitalists' exploitation relies on the workers' games of production. In fact, in the rolling mill the workers adapted to boredom by playing games as long as they were dangerous, and consented to produce as long as their work was physically coercive. According to Charlie the rollers – like Seligman's dog – had become dependent on 'pain' (be it psychological or physical), which is implicit in working in the rolling mill.

Charlie pointed me to the pile of dust, coables, old ingots and pigeon shit in the rolling mill, and explained his plans to re-melt the cobles and ingots thus saving company costs, to sweep the dust coming from the furnace from the floor in front of the mill, to repair the second roll (which could remarkably increase the productive capacity of the mill), and clean the black grease on the mirror by the panel.

But the company didn't share Charlie's sense of order. In fact, when I told Mr. Garrett about the possibility of recycling the ingots and the coables, he replied that 'the company doesn't intend to use extra labour to recycle the ingots. These ingots are rather a company asset to be sold in the scrap market when the time will come...'. Besides, Charlie's preoccupation with the state of the rolls didn't bother Antonio and Jim, who thought that the mill could work with two rolls instead of three and that the daily breakdowns of the mill were a 'normal fact'. Almost everything for Charlie was 'like a

little electric shock': the chains for loading the billets into the oven were worn and would soon snap; the glass of the panel control was broken right in the middle so that its operator couldn't see the ingots on the bridge; the handle of the ten-kilo hammer was split in the middle, so that the hammer's head would soon fly off.

These little details worried Charlie because they revealed the company's policy of decreasing the investments and productive capacity of the rolling mill, already at its lowest level of 348 ingots per week From the economic point of view, this meant that on top of their basic wages (£180/w), the rollers could add only a £90 weekly bonus and never reach the £180/w bonus level. Because of the continuous breakdowns of the rolls, rollers spent long hours chatting or playing cards in the break-room and they were therefore asked by the company to spend a few extra unpaid hours every week to 'catch up' with the work. Since they ended up doing an average of 6 extra hours per week, their nominal hourly income of £6.70 was reduced to £5.80, the lowest in the company.

Thus, the lack of order on the shopfloor and the anarchic behaviour of the rollers reinforced Charlie's feeling that the rolling mill would soon close down as the increasing amount of billets that the company was buying from outside testified. The fact that his workmates were adapting to the unhealthy, dangerous and boring work of the rolling mill, made Charlie think that they were becoming a little bit like Seligman's dogs.

Charlie's interests in the 'contradictions' of the rolling mill struck me as being particularly interesting for three reasons. Firstly, because in spite of the fact that the tasks of the mill were repetitive, highly structured by the technological system and punctuated by long waits on the shopfloor and chats in the break-room, these tasks ended up being extremely dangerous, in fact more dangerous than some tasks performed in the melting shop. Secondly, because the team-working patterns enforced by the company reduced the informal control of the group over the labour process and empowered the figure of the supervisor. Curiously, as I will show in the following section, the enforcement of an authority external to the informal group of the rollers increased the jokes, shirking, and anarchy of the rolling mill and ultimately the dangerous practices on the shopfloor. Finally, because the contradictions of the rolling mill were reflected in Charlie's own contradictions. In fact, he was constantly split

between the role of 'political leader' and that of 'buffoon' of the group, and continuously shifting between political sermons and sexual jokes that left the audience of the break-room confused. Often drunk on the shopfloor, he crashed the over-ground crane against the wall, fell asleep in the mud under the mill when he worked as contractor, made dangerous cobles at the panel and fell on the billets when working as a cogger. Nevertheless when sober, Charlie was the strongest man in the group when they had to collectively remove the billets stuck in the oven, the most skilled roller in the panel (in fact he could roll and read at the same time) and the most caring union representative of the firm. Until Alan (the supervisor) was burdened with a responsibility that he didn't want, Charlie was also in charge of the overtime and shifts of the group.

The Rolling mill: layout and tasks

The rolling mill is located at the far right-hand side of the melting shop. The lack of a physical barrier between the two spaces makes the rolling mill a collector of wastes from the furnace. In fact, every day the wind blowing from the furnace changes the geography of the rolling mill into squares of solid black soot, volatile piles of grey ash, fences of silver ingots and shades of grainy aluminium powder on the panels' glass. Strong lights directed towards the mill and the oven blind the occasional passers-by. On one side of the rolling mill a row of lorry seats fixed to the wall welcome the occasional visitors. On the other side, long lines of silver ingots are piled ready to be reheated. Every morning Toby chops off the small extremities of the billets with a ten-kilo hammer and helps Alan to load them into the gas-fired furnace. At the end of the long furnace, a heavy door opens automatically, pushing out the heated ingot. In the panel room, Ash controls the two pincers that, opening like jaws, grasp the ingot and move it sideways towards the first set of rolls on the mill. Between the heats (2 minutes), Ash sweeps the steel-plated floor at the bottom of the furnace to gather the scale fallen from the ingots, and spreads water and lime to prevent the ingots from sticking to the floor.

The 1950s' rolling mill is made of heterogeneous pieces of rolls, levers, teeth, bars and arms that Antonio and Jim recovered from different machines and assembled more than 10 years ago. This mechanical *bricolage* hides the colourful variety of the different pieces under a thick layer of grease, which joins the cooling water of the rollers in a

liquid mud that falls into the rolling cabin under the mill. Illuminated from below, the cabin looks like a natural underground pool of dark water. The glass box where Charlie operates the electric switches and levers to control the movements of the billets to and from the rolls is suspended over the bridge. Inside the box, Charlie sits on a lorry seat that has been welded onto a round steel base. He is surrounded by a stereo, a mug, an ashtray filled with half-smoked cigarettes, a small desk to accommodate his sociology manuals, a small wooden cabinet filled with half-drunk bottles of whisky and an oil barrel for additional guests. The first two rolls of the mill are big (1 metre in diameter) and flat, whilst the others in line from them are progressively smaller and have grooves cut out. The last two pairs of rolls form small diamond-shaped holes which give the billet its final shape and length.

Charlie operates the two levers of the panel simultaneously with wide-open arms. With one lever he controls the vertical motion of the bridge; with the other he moves the tipplers of the small arms that turn the ingot over. One of the two electric motors of the bridge is broken so that ingots can be rolled only from the left to the right. As the red ingot passes through the rolls, it draws out and accelerates its movements on the bridge. A big red clock (with a 'ROLEX' sign handwritten on it) frantically spreads its lancets in opposite directions, pointing at different numbers every time the ingot hits a pair of rolls. The higher the numbers are, the shorter is the distance between two rolls ('it means "fractions" Charlie told me to explain their meaning). Before team-working was introduced, Charlie kept the production schedules. Now, Alan keeps the production records watching the clock by the bridge. Each time the ingot is pushed back by the vertical motion of the bridge, Roger ('the cogger') turns it with diamond-shaped tongs, his legs opened above the red ingot.

When the ingot is rolled into billets about four metres long, a conveyor belt transports it into Jack's panel, where he saws its split end off with a strong laser flame. The glass of Jack's panel is completely covered with mud and he checks the laser flame either through a small frame that he has cleared in the mud, or by shifting his body outside the panel and towards the belt. Loud classical FM music mixes dramatically with the sparks, noises and electric blue light of the laser flame. Jack picks up the split ends that he sawed off with a pair of tongs and puts them in the scrap basket. Every ten billets, he loads a split end on a smaller conveyor belt that leads into the quality controller's test

room. The main conveyor belt stocks the red billets onto a mechanical ladder that releases the billets into the company yard every half hour. From here, Ian loads them on the fork-lift truck and drives them to the billet- conditioning department where they are checked and ground with pneumatic hammer tools by Trevor, John and David. From the conditioning department, Ian loads them back on the fork-lift truck and unloads them in the company yard, where they slowly cool down.

The rolling mill, panel control and re-heating furnace are densely packed on the shopfloor so that the workers move above the bridge, and between the furnace and the mill, missing the trajectories of the red ingots by a few inches. The billets crushing against the rolls explode into fragments of steel that make small red dots on the workers' faces and bodies. The steam of the water falling on the hot ingots makes any attempt to foresee the direction of the fragments impossible. Safe passages across the bridge, small corners protected from the billet explosions and the best timing for moving by the furnace are familiar to the workers of the department only and unknown to the managers and the other workers. The danger of the work performed in the rolling mill, increased by the obsolescence of its machines, keeps 'curious visitors' away from the shopfloor and increases the rollers' reputation of being a 'dangerous workforce'. This reputation is also reflected in the poor working conditions of the shopfloor: the dense steam, filled according to some workers, with 'legionnaires' disease'; the smell of grease and soot; and the pile of dust and ashes around the mill.

Nevertheless, 'dangerous moments are also the only moments when the workforce is united', according to Ash. In fact, when the ingots got stuck inside the furnace, Ash, Roger, Charlie and Toby clustered like a rugby team around a heavy bar loaded on a chain fixed to the crane, and joined forces to make the ingot swing. Once they have pulled the heavy bar towards the wall opposite the furnace, they suddenly release it, directing its violent swing towards the ingot stuck inside it. The free fall of the bar carries with it the light pack of workers along the swing of the chain, their feet above the ground. The ingot bounces back from the furnace crashing against the wall, amid the laughter and swearing of the workers whose excitement grows stronger when Roger – shorter than the others – doesn't release his grip from the ingot in time, thus following the backwards trajectory of the bar and its crashing against the wall.

Changing work in the mill and changing moods in the rollers' break-room

Perceived as 'dangerous' by the other workers and 'inefficient' by the managers, the rolling mill enjoyed a comfortable isolation among its jokes, laughter and minor sabotage. For instance, Ash would put obstacles by the scrap ramp to derail Tim's fork lift truck; Roger would break Antonio's locker in search of his mother's photos and Charlie would sweep the shopfloor dust back into the labourers' pit-holes. During this time, Charlie informally supervised the shopfloor, controlled the equipment, kept the production records, negotiated the manning levels with the fitters, and distributed the overtime among the workers. Charlie urged the fitters to change the rolls of the mill and repair the motor of the bridge, and Mr. Garrett, to substitute the chain of the crane and the faulty door of the furnace.

Besides, Charlie distributed the contracted work equally among his group.
The fact that the workers of the rolling mill were paid as contractors during the company's shutdowns increased their low status among the workforce. In fact contractors were highly despised by the workers because they supplied cheaper labour to the owners and replaced the ancillary workers of the firm. They were also criticised by the fitters, because they altered the lining of bricks inside the furnace and the manning times of machines, and stole dies and gauges from the mill bridge. They were closely checked by the managers because they used the electricity and tools of the company or broke into its 'restricted spaces'. With their floppy white overalls, awkward protective boots and white helmets they were banned from the 'restricted spaces', checked at the gatehouse by Mr. Garrett, prevented from using cranes, chains, ladders and tools, and from resting in the company's break-room. Contractors spend their working and resting time inside tanks, tunnels, pits and chambers where high heat, soot and darkness isolate them from the world of the workers outside. In the rolling mill, the strong opposition of the workforce towards the contractors was mitigated by the fact that some of its workers, like Charlie, were employed as contractors to perform the most wearing and unskilled tasks on the shopfloor.

Since he had started his nursing at Todwick Nursing Home, Charlie was able to draw meaningful links between his activity as a nurse and his activity as an informal leader of

the rolling mill. They were both manual jobs (in fact, he deliberately chose to do 'hard nursing' consisting of cleaning, toileting and feeding the disabled elderly patients). Both involved an unbalanced relation between 'weak' and 'strong' persons and a caring attitude of the latter towards the former. In fact, as informal leader, Charlie 'took care of his men' on the shopfloor, preventing them from playing dangerous games when he himself was not stumbling on the bridge or falling from the panel box stairs. In the break-room, Charlie forced his men to get involved in public discussions on features in the 'Guardian' rather than isolating themselves whilst reading the 'Sun' or 'Daily Mirror' (provided that I helped them to translate the difficult words used by the 'left intellectuals' such as 'Faustian pact'). When he didn't pull his trousers down to show us that he didn't wear pants, when he didn't fall asleep, drunk, on the break-room bench and he avoided mentioning his small sexual abuses of 'the locals' when he was Army policeman in Tean Inlet, Falkland, he always gave the conversations in the break-room a political twist.

Thus, before team work was introduced, in the break-room the rollers would talk with disgust of the owners' 'politics of profit', and would collectively agree that – in the words of Ash – 'capitalism is the same everywhere and the owners of UNSOR are not different from the owners of the Nike sweatshops in the third world, where they beat the workers with sticks'. Alan, the supervisor, would sit silently at the table of the break-room until half way through the break, when – having eaten half of the sandwich – he distributed the other half to the pigeons in the company yard. Being close to retirement he wanted to spend his time in peace, avoiding the arguments and stressful negotiations on manning times between Keith Williams and the rollers that he thought had caused him sudden bursts of high blood pressure recently. Alan claimed to be 'a good man with the hammer and a bad man with the brain', and said that he was happy to devolve the supervision of the rolling mill to Charlie. Thus, the formal authority of the supervisor in the rolling mill, was substituted by the informal authority of Charlie who was able to co-opt the workers into production through a mixture of discipline and irony.

The rollers – all divorced or unmarried – were quite clear that the problem in UNSOR was the low level of political awareness of the cold workers, whose newly formed families forced them into complete submission to the company. In fact, according to

them, the cold workers had signed the 'agreement to opt out'[151] and therefore consented to the heavy overtimes imposed on them by the managers, due to the fact that they had mortgages to pay, capricious wives to please and young children to feed. Ash claimed that in UNSOR the workers of the cold department were all 'young, rich and pro-company' and that they shared the 'materialistic view of the owners that work is only for profit', whereas the workers of the hot department were 'older, poor and anti-capitalist'. Alan shared Ash's point and he thought that the divide between young and elder workers in UNSOR was due to their different educational backgrounds. In fact, Alan thought that the younger workers of the grinding section were 'more educated' than the elder workers of the hot department, and that 'formal education cocked them up' and made them think 'that they can avoid the natural laws of the shopfloor'. Charlie didn't agree with Ash and Alan and thought that the higher education and formal skills of the cold workers didn't make them richer, or less working class. 'In the long run, the owners will replace them and force them to do dog jobs like ours. They are just too young to see what comes next'. Craig, the cleaner, would put an end to the breaks of the rollers by spraying a smelly detergent on the greasy wooden table. Ash would kick his backside and Ian would swear at him, 'You can't clean while we eat'. Charlie would silently disapprove of their behaviour given that Craig has learning disabilities.

When Charlie knew that the new-team working patterns were going to be implemented in the rolling mill in January 2001, he thought that this was a further 'ringing bell' for the rollers. Charlie had the idea of creating a 'working committee' where workers, managers and the owners would meet and discuss 'shopfloor management' while we were working as contractors in the waste cabin underneath the rod mill during a shut down. The waste cabin is a ten-metre-square steel room located two metres below the ground where oil, scale, grease, water and mud flow during the rolling of rods. The cleaning operations start at the top of the cabin whose superficial layer of wastes is removed and loaded into a basket with the help of a crane. After one day of work, Charlie, Andy and I moved to the bottom of the cabin, taking with us a small electric

[151] The 'Agreement to opt out of the working time regulation 1998' had been signed by all the cold workers. In the contract, the employee declared to 'agree with UNSOR Steel that the limit on regulations 4(1) of the Working Time Regulation 1988 shall not apply to me and that my average working time may therefore exceed 48 hours for each seven-day period'. An 'Important Notice' at the end of the contract warns that 'you should be aware that if you decide not to out put then you are required by law to inform the company of any hours of paid employment undertaken elsewhere. These hours have to be included in the calculation of the Maximum Weekly Working Time.'

lamp to light the sea of waste in which our legs were plunged up to the knees. In the cabin, Charlie expressed his hope that the committee would force the owners to properly manage the shopfloor, thus avoiding the company's bankruptcy.

With the implementation of team-working in the rolling mill, the distribution of tasks among the rollers remained almost unchanged. In fact, both Ian (the fork-lift driver) and Jack (the laser operator) refused to rotate on different jobs, strengthened their hold on their previous positions and stopped helping the others on minor tasks around the mill. They justified their refusal by the fact that they had received special training for their jobs from the company. The main functions of keeping the production records, co-ordinating with the quality department and controlling the rolling mill equipment were now delegated to Alan, who had become team leader. Alan ceased helping Toby to load the ingots, and he now spent most of the time by the mill bridge, looking at the ingots passing through the rolls and keeping records of their specifications. Because the reinforcement of Alan's authority on the shopfloor decreased the workers' control over the process of production and their anxieties on the shopfloor, they clung to the formal job descriptions of the company, and ceased their informal co- operation. They also refused Mr. Garrett's claim that team-work would make their work 'less boring', and said that they didn't mind performing boring tasks. Thus, the implementation of team-work increased the rigidity of the working group, rather than its flexibility. The group took greater risks on the shopfloor (Charlie fell on an ingot with his trousers down and his backside was roasted 'like a leg of lamb'), and increased its arguments in the break-room. In fact, Charlie accused Alan of not urging the fitters to repair the rolling mill enough; Ash accused him of privileging Roger in distributing overtime, which he accused Roger of egoistically accepting, and Ian – who crashed his fork-lift truck against one of Ash's obstacles – accused Ash of having 'fucked up' his fork lift truck.

In February, Alan, Ian and Roger migrated from the break-room to spend their breaks in the fitters' room. Craig disappeared too, so that the rollers' breaks naturally expanded. Charlie's suggestion of creating a working committee had been turned down by the managers and the owners, and strongly criticised by the workers. In fact Ash didn't want to collaborate with the management and accused Charlie of being a 'collaborationist'. Similarly, Antonio and Alan agreed that Charlie was being ambitious, trying to 'put a foot into the offices' by increasing his suggestions about ingots to

recycle, rolls to repair and dust to sweep. As the company externalised the production of ingots, the melting shop, the rolling mill and the rod mill slowed down their production. The fitters disappeared from the rolling mill so that when the door of the gas furnace broke, Ash and Toby had to open it manually with the help of the crane chain, which finally snapped. Charlie couldn't understand the passive acceptance of the situation by Ash, Toby and Jack. These latter couldn't understand Charlie's involvement in the cleaning of the shopfloor and his attempt to communicate more closely with the company's owners. The ISTC officer to whom Charlie had referred the poor working conditions in the rolling mill, replied that none of the hot workers was a member of the union and that therefore he couldn't 'interfere with the owners'. The lack of trade union activism in the hot department was explained to me by the workers as a refusal to subscribe to the ISTC collaborationist policies and a consciousness of the strong link between the interests of the local ISTC and the interests of the cold workers[152].

If team-work didn't change the formal distribution of labour on the rolling mill, it deeply affected its social texture. Alan had responsibilities that he didn't want; Charlie, Ash, Toby and Roger were overloaded with work that they tried to avoid; the chain of the crane and the roll of the mill were definitively broken and nobody could formally decide whether this was to be considered ordinary or extra ordinary maintenance, so that no action was taken. As the rolling mill slowed down production, the shopfloor became increasingly obsolete and dangerous and discussions in the break-room turned suddenly light, elusive and sexually oriented. Every morning Ash would ask me 'if I had fucked my wife all right' and would bully Toby with a knife. Toby went back to reading the 'Sun', making fun of Charlie's attempts 'to become literate'. Jack welcomed Roger back by forcing him into a long, fake 'shag' in the locker room. Ian would play golf in the field in front of the furnace, and Charlie would study sociology in a corner. No mention of the owners or of the financial state of the company was ever made until, when administrators came, it was too late.

[152] Some workers attributed this fact to the parental link between the local ISTC officer and workers of the finishing department; others, to the historical strength of the wire workers' union within the ISTC.

Concluding remarks on the rolling mill

The rolling mill provides an interesting case against 'flexible production'. In fact, the introduction of – in the words of the company – 'flexible working patterns' destroyed the flexible arrangements and informal co-operation in the rolling mill. As a result, instead of making labour more flexible and labour relations more equalitarian, 'team-work' reinforced the formal authority of the supervisor and formal patterns of labour organisation. Thus this case confirms recent case studies focused on the enforcement of team-working practices in capitalist enterprises[153] that claim that the aim of team-working is to break the workers' informal control over the process of production rather than to increase efficiency.

Besides, the social dynamics of the break-room provide interesting insights into the different ways in which the workers construct their consent to capitalist production. In fact, during normal times, the dangerous working environment of the rolling mill reinforced the informal boundaries of the group of the rollers and provided ground for their collective awareness of the political conflicts implicit in capitalist production. Charlie's informal leadership, and his ability to reconcile 'fun' and 'efficiency' on the shopfloor, was pivotal in ensuring the rollers' consent to produce in spite of their low wages and the low investments of the company in the rolling mill. During UNSOR's economic decline, and following the introduction of team-working patterns, the informal group split apart, and the political awareness of the rollers fragmented into differentiated and individualistic workers' attitudes towards the capitalists. Ultimately, the breaking of the informal ties among the rollers and their political fragmentation decreased the workers' consent to production. Thus this case complements M. Burawoy's emphasis on the exploitative role of games of production and shows that 'political awareness' can sometimes serve as one of these exploitative games. This case also confirms Burawoy's point of the role of the trade union in enhancing consent among the workers.

[153] Pollert (1991); Kelly (1991); Stephenson (1991); McKinlay and Taylor (1998).

The COLD department

The cold department is located on the old shopfloor of a Victorian wire making company. The shopfloor is approximately 100 metres long and divided into two bays of about 30 metres wide. In Lind's bay, rods are transformed into wires in the 'shumag' machines, flat spinning drums that hammer rods into small dies by percussion. In the grinding bay two 'Windsor' machines straighten rods into bars that three operators grind on three separate grinding machines. Four operators pack them and the fork-lift truck driver takes them into the yard. The temperature in the cold department is often below zero during the winter and very high during the summer, due to the plastic screens that have replaced the old Victorian bricks on the roof. White lubricating soap for the dies (aluminium or sodium stearate) and coating powder cover Bay 2, whereas silver particles of steel cover the grinding bay. A wide door that opens automatically under the weight of fork-lift trucks connects the two long bays. Fork-lift trucks cross the shopfloor speeding half way through it and beeping at the workers around.

The cold department is highly labour-intensive; but whilst the company classes the operations in the grinding bay as 'skilled' it considers the operations at Lind's bay as 'unskilled'. With regard to recruitment policy, the company requires a minimum of 4 GSCEs for the former workers and only 'physical strength' for the latter. In terms of real wages, the former earn between £7 and £9 per hour, the latter between £6 and £7 per hour. The average age in Bay 3 is 30, with 'men' at the packing section and 'boys' at the grinding machines. In Bay 2, the average age is 35. The cold workers work a minimum of 48 hours a week on three shifts without interruption, complaint or absence. The 'boys' at the grinding machines work a minimum of 50 hours per week. In the grinding bay, the 'men' are all members of the ISTC whereas none of the 'boys' is. In Lind's bay, all the workers are members of the ISTC and Lind is also the company Health and Safety rep.

The 'boys' are all married, apolitical, well educated, moderate in their views and balanced in their judgements. For instance, in my conversations with them during break-times Willie (26 years old) told me that he didn't get involved in politics much because 'my interests and the interests of the owners are the same: to make money';

Sean (25 years old) considered that almost all his friends outside Unsor were 'managers or self-employed' and that 'it doesn't really matter if they are managers, owners or workers, since we all live in Kiveton Park, we all drink at the 'Red Lion' on Saturday night and we know each other since we were kids'. 'The problem in UNSOR', he concluded, 'is that there are too many old 'men' with old ideas about work, rights and socialising on the shopfloor. I don't come to work to socialise but to work! And to work fast because I don't know if this place will be open tomorrow ...' The 'men' of the cold department are always busy packing bars of steel and moving the cranes along the shopfloor. Like small mechanical extensions of the crane, they move on the grinding bay sideways, never talking with each other or releasing their bodies into unplanned movement.

The 'boys' of the grinding bay constantly intensify their production to increase their bonus, whereas the 'men's' movements are constrained by the slow movements of the cranes that have recently been put on Bay 3. Besides, given that the bonus of the department is calculated from the amount of finished bars stacked by the grinding machines, the 'men' keep a steady rhythm of work that strongly contrasts with the frantic rhythm of the 'boys'. 'Men' and 'boys' are not only distant on the shopfloor, but also during break-time. The former spend their breaks in Lind's break-room, and the latter sit among the cardboard screens, postcards and wooden cupboards that they have built around their machines.

Mr. Garrett's glance extends from the gatehouse into the grinding bay through the four CCTV cameras located at the four corners of the ceiling of the bay. In front of each machine and inside each loading space, production schedules are constantly updated and the quality of the bars checked by Chris, the quality controller. Mr. Bowers often walks around the grinding bay discussing the 'hardness', 'flexibility' and 'tensile' ratios of the bars with Chris and the bay's supervisors, the ear-muffs on his helmet sticking out laterally like insect antennae.

Walking into Bay 1 – at the back of the grinding bay – is like entering into a boiling pan. Steams of sulphuric acid, phosphate, stearate and lime solution fill the space with yellow and pale magenta clouds. Three workers stand suspended by the 5-metre-high tanks, plunging coils in them with the help of cranes. The three workers are middle aged,

silent and reserved. They are said to know the chemical solution contained inside the tanks and this might explain their reluctance to talk to me. But during our slow conversations, I had the impression that the fumes of the tanks, and the watery and humid atmosphere of the bay in which they worked for eight hours in a row, had entered their bodies and made them vague and abstracted. I noticed shades of yellow and magenta on Jimmy's eyebrows and beard while he was telling me of his passion for Italian mortuary art.

The wire worker's break-room is close to Lind's machine. In the empty room a stereo on the fridge constantly playing loud music, cards left on the table and half-eaten bananas reveal that short breaks have been taken during working time. A door connects the break-room to a small office. On the office desk a plastic plaque reads: 'Max Mollona'. From 'my office' a small room leads into the die shop where Mel, a strongly-built man of 55, makes dies for the shumag machines. With his black old- fashioned glasses, white beard and strong build, Mel looks like a cross between Santa Claus and Ernest Hemingway. He normally works at night, cutting, hardening and grinding small dies that the 'lads of Lind's bay haven't quite learnt to make yet'. With the soft voices of Frank Sinatra, Billy Holliday and Dean Martin in the background, Mel starts his night shifts boiling some milk on his camping stove and reading the Angling Star. At 4.a.m., after five hours of work on the dies, Mel locks his tools in the green cupboard, boils a 'Campbell Soup' and starts working on his fishing line. At six o'clock he leaves the office, loads the fishing box into his car and drives to Lindmill fishing pond.

'Caught up in webs of sounds'

After I had spent some time in the cold department, I realised the reason why I was given an office between the die shop and Lind's bay. In fact, the company's strategy to increase the finishing of rods supplied from outside required substantial changes in the die shop and on Bay 2 towards an increasing intensification of production to be achieved by training the operative workers on specialist tasks. Thus, the owners believed that I could convince the guys in Bay 2, especially Lind (the supervisor), to accept these changes. I hadn't received clear instructions from management on 'how' to convince the guys to accept team-working; but I realised that my very presence on the shopfloor, at the beginning of my fieldwork, was perceived as an extension' of Mr.

Bowers' authoritative gaze and that it therefore put pressure on the workers of Bay 2 to consent to the organisational changes. When I arrived at UNSOR, Mel was training Andy, Bob, Sean, Tony and Jim and the other wire workers at the die shop. The objective of the company was to increase the flexibility of the wire workers in responding to different customers' specifications and adapting the specifications of the rods bought to the specifications of the wires to be sold. The training was meant to allow the wire workers to shift between different productive specifications without having to rely on Mel and the quality controller. Instead of signing the production schedule filled by Mel, waiting for the schedule to be approved by the quality control department and collecting the die at Mel's shop, the workers could walk into the die shop and make their own die when the size needed was not on the shelves.

Training had three consequences at Lind's bay. First, it cut a line of authority. In fact, Steve Cash was moved from 'my' office to the quality control office and Lind – the wire workers' supervisor – became directly responsible for the final sizes of the wires and their 'tensile' properties. Secondly, it speeded up production at Bay 2 in that it eliminated the prolonged intervals resulting from the difficult interactions between the die shop and the administration. During these intervals, the guys at Lind's bay disappeared in the break-room, restarting the card games that they had interrupted during the last die change. Lastly, the wire workers learned the 'language' of the production standards. Thus, if before training the wire workers could pretend to ignore Bowers' esoteric rules about the 'tensile properties', 'flexible responses', 'elastic regimes' and 'endurance limits' of the wires, once they had learned the language of the market, they had to adapt 'just in time' to the feedback received from Asthon on production standards. The guys were happy to do extra work and additional shifts, due to the huge increase in bonuses, and shift and overtime allowances, that followed. Besides, Sean surprisingly enjoyed his training at the die shop. 'At the beginning I was lost. I have never been good with my brain and the fact of working in a skilled job terrified me', he told me after two months of training. Having got used to the peaceful atmosphere of the die shop, to solitary 'naps' and to Mel's soft music, Sean volunteered for another two months of training, to the surprise and amusement of his mates.

According to Lind, the intensification of production had forced the guys into dangerous work practices that had recently caused several small accidents. For instance, Sean had

stumbled on a coil and almost broken his leg; a wire split-end had cut Tony's forehead and he almost lost an eye, and Bob's fingers had got stuck inside the wire rolling around the drum of the machine. Lind managed to switch the machine off only seconds before his hand was chopped. Wire working, Lind told me, is very dangerous because it is a repetitive and 'rhythmical' job. In fact, when the shumag machines roll and flatten rods into wires, they produce deafening rhythmical noises which the workers get used to. As the rhythm of the machines speeds up so do the workers, thus forgetting the cutting surface of the wires and their unpredictable trajectories around the drums. Wire work requires a strange mixture of strength, patience and precision. In fact, the operator carefully arranges tangled webs of rods around the drums of the machine, shapes them with a hand tool while they spin, drawing the metal through a die lubricated with soap, and cuts them to size and compresses them by fixing small steel bands around them with a pneumatic hammer. According to Lind, wire workers are heavily hit by industrial hazards because 'the wires entangle you without you being aware of it'. Wires cut hands and fingers, they strangle, unbalance and pierce like arrows into the eyes 'up until the brain'.

Lind thought that 'sounds' were the very source of all the hazards on his bay. To explain this problem, Lind spent a whole morning shift describing to me the intricacies of the 'human hearing system'. Lind claimed that 'with the increase of work on the bay, the rhythms of our machines have increased. The guys are following their rhythm without realising that they are working faster. As a consequence, the sound level of the bay is at the edge of the pain threshold[154] and yet the guys don't realise it. In fact, sounds are like ripples on a pond spread into three dimensions. Waves of sound radiate in the air, reflect and reverberate on surfaces, join into higher sounds when they meet. Thus, the sound that we hear from each machine is only a small portion of the overall sound stimulation to which our brain is exposed. The guys have become addicted to the fast work and the loud noises of the machines without realising that they are caught up in a web of sounds'.

Thus, Lind's knowledge of the subtleties and intricacies of the human hearing system, led him to worry about the effects of the intensification of production on his workers'

[154] At this level of noise ear-protection is ineffective.

health. Lind is one of the two health and safety representatives for the cold department. To Lind, health and safety issues involved highly political concerns that revolve around the control of the production process. In fact, Lind tells me that the Health and Safety at Work Act (1974) allows union representatives to confront the management on the 'system of work' on the shopfloor. Nevertheless, Lind's reports on the poor investments of the company in safe working practices normally leave the ISTC branch secretary unimpressed. According to Lind, this is due to the union's politics of focusing on workers' compensation, rather than on shopfloor negotiation focused on the prevention of accidents. Thus, if at the branch level the HSWA is conceived as a legal weapon to obtain from the capitalists greater compensations for industrial accidents, at the shopfloor level it potentially allows the health and safety representatives to challenge the company's working practices.

In fact, in one of the meetings of the committee – between the owners, Mr. Garrett and the safety representatives – Lind was able to present the owners with the results of his 'Octave band analysis' (which he learned at a self-financed NEBOSH course) that clearly showed that the sound level of his bay was close to the pain threshold (120dBAs). With a further test conducted on the shopfloor in the presence of the two owners and Mr. Garrett, Lind proved his ingenious connection between sound level and production intensity, and forced the company to slow down production at Bay 2. The company agreed to reduce the manning time[155] of the bay and to ban overtime and extra work in the wire bay due to their 'excessive damage to the hearing and nervous system'[156].

With the exception of what happened on Lind's bay, the Health and Safety Committee meetings reinforced the owners' control, and removed negotiations on working practices and conditions from the shopfloor. In fact, as a consequence of these meetings, discussions about changes on the shopfloor were, on the one hand, prevented by the existence of a national legal framework on which the workers did not have any say, and on the other hand, they were framed in highly subjective terms, such as 'risk', 'danger', 'efforts' and 'boredom'. This subjective and emotional 'style', introduced in shopfloor

[155] Other more efficient options (sound filters and screens, substitution of internal hammers) were not considered due to lack of funds.
[156] Minutes of the 21.12.2000 Company Safety Committee.

negotiations, ultimately fragmented the workers' shopfloor culture'. For instance, the Committee legitimised the frequent stoppages of the furnace with 'warnings of refractory ceramic fibre in the furnace lining being categorised as carcinogen 2 substance'; the slowdowns of the rolling mill with 'wire ropes breakage due to rust in the rope core'; the extra shift allowance given to the 'boys' of the grinding section with 'stress management and prevention of unsafe working practices of the workforce of Bay 3'; and the redundancy of one of the three workers at the acid tank with the 'prevention of noxious and offensive substances being emitted into the air' according to the Environmental Protection Act (1990). For the 'men' of the grinding bay, the health and safety committees resulted in intensified production. In fact, the owners claimed that the packing operations of the men of the grinding section involved 'unsafe practices and the lifting of excessive weight' [157], and that they therefore breached the Manual Handling Operations Regulations (1992). As a consequence, overhead cranes were introduced to lift and move wires and rods, production tasks were standardised and timed, and the 'men' forced into continuous working sequences and stricter supervision from the quality controller.

Lind's opposition to overtime at Bay 2 increased the supervision of Mr. Bowers over the operations of the guys. Bowers started to have his breaks in the grinders' break room facing Lind's desk on Bay 2, and Lind and I would anxiously follow his antenna-like earmuffs during his walks along the cold department. Disappointed because of the slowing down of the pace of the shumag machines, Bowers bullied Lind constantly. He pressured him to resign from the ISTC, accused him of being incompetent in 'quality matters', and warned him not to be seen talking with 'communists' (that is, me) on the shopfloor. The guys of the bay, silently resentful of Lind, kept on speeding up production, especially during the night shifts when Lind was not around and the hip-hop music of their heavy stereos mixed with the tumbling noise of the machines' spinning drums. Due to the increased formal control from Mr. Bowers and the informal control of the guys, Lind and I moved our conversations into the break-room, which was empty during working time. Pausing at every little noise coming from the adjacent rooms, our conversations filled with conspiracy and self-awareness.

[157] Minutes of the 25.9.99 Company Safety Committee

During our conversations I understood the reasons for Lind's passionate involvement in the safety of his guys. In fact, Lind comes from a family of miners who had been decimated by industrial accidents. His grandfather and his uncle died working at the front face of the Kiveton Park pit, and his mother's father died in the Thurcroft Colliery. Lind's father, who had to wash and dress his dead father for the funeral at the early age of 8, worked all his life in the Kiveton Park Miners' Rescue Team, and never lost a day of work in all his career. In fact, when the NUM organised the renowned strike in South Yorkshire, his father was one of the 'scum' who went to work escorted by the police. 'He said that danger is never on strike', Lind told me with a puzzled expression. Lind, 49 and with two sons – one of whom is 'mentally impaired' – has been a militant member of the socialist party and a member of the ISTC since he was 18. The steelworkers and the ISTC have 'bartered their souls for money', he thinks; they are losing control of the 'human element of production' and getting too focused on wages and industrial compensations. 'To me health and safety means psychological and spiritual, as well as physical health, and this is the reason why I am a Christian socialist' he confessed to me one day, whispering the word 'Christian' and peaking on the word 'socialist'. 'Working relations', he added inspiringly, 'are made of moral obligations, not only of wages; and the guys on the shopfloor have different abilities and needs that have to be acknowledged. 'Look at Sean' his voice lowered again, 'he is not very clever, only yesterday he fell again and burnt his face on the rods. But instead of making fun of him, like the guys do, or trying to fire him – like Mr. Bowers does – he should be protected!'

Visions from the dog-house

Mr. Garrett spends most of his time in 'voluntary exile' from his office in the gatehouse. Here, he talks with lorry drivers, health and safety equipment salesmen, Craig, and has endless phone conversations with his wife and with the weather forecast office for a rough estimate of the prices of electricity for the night[158]. Garrett welcomes lorry drivers from all over Europe in their native language, checks their documents and loads and weighs their lorries on the weigh-bridge The gatehouse is called 'the dog-house' by the workers because everybody considered it Nene's (the security guard's greyhound) home rather than Garrett's office. After several complaints by Mr. Garrett to the owners,

[158] In fact, electricity costs increase on rainy and cold days and decrease on sunny and warm ones.

rather than Garrett's office. After several complaints by Mr. Garrett to the owners, Nene was banned from the dog-house and now Garrett's fat cat sleeps on top of the CCVT monitor. Garrett's voluntary exile is due to his disagreement with the company's vision of health and safety practices. In a nutshell, Garrett thinks that the cold department is massively affected by 'white finger', arthritis', 'occupational deafness', and 'neural and musculoskeletal disorders' due to its intensity of production. Tendinitis, swelling joint capsules, strained ligaments, torn discs, entrapped nerves, muscle cramps, Dupuytren's contracture (in the workers' words 'monkey's hand'), deafness, bodily vibration, positional vertigo, tinnitus. According to him, all these invisible symptoms have spread in the cold department 'due to the lack of investment in labour-saving machines' on the part of the owners. In fact, Garrett would often repeat to me that the labour-intensive nature of work in the cold department – stacking, slinging, grinding, turning, loading and handling – 'reduces the body of the guys into a mechanical appendix of the machines'. 'These poor guys are forced into heavy manual labour and as a health and safety manager, I have to protect them' he used to say, while watching the fast movements of the guys on the CCTV monitor. Garrett views the company as split between the hot department (capital-intensive) and the cold department (labour-intensive) and thinks that the intensification of production is absorbed by machines in the former and by men in the latter. This is the reason why he uses the Committee meetings to put forward his proposals for increasing the mechanisation of the cold department and why, in his ergonomic vision of the future at UNSOR, mechanisation will totally replace the hard work of the 'poor guys'.

Behind the glass window of the dog-house, a first-aid room contains a bed, oxygen cylinders and drawers full of painkillers, plasters, bandages, drugs and syringes. Converted to Christianity by an Irish communist friend of his on the day that his father died in a car accident, Garrett is slowly detaching himself from the economic dynamics of the company and is increasingly absorbed in the activities of his church and of the 'Knights of St Columbus' of which he has been member for 20 years. 'When I became Christian, from being a communist, I realised that happiness is an individual state, not a matter of brotherhood', he told me one day when I asked him if he felt isolated in the gatehouse. After his afternoon naps on the first-aid bed, Garrett trims the roses in front of the car park, feeds the cat and constantly switches his glance between the images of the guys of the grinding bay on the monitor and the cornfields all around the gatehouse.

ISTC

On that evening, Lind and I had gone to the ISTC divisional branch to raise our concerns over UNSOR's imminent closure. For the political seminar Joe Man (political officer of the ISTC), Steve Seldom (Health and Safety officer of the ISTC) and Denis MacShane had arrived from London. With them, Maggie (ISTC union rep in a Rotherham firm), Jack (TUC education officer), Bob (union rep in the Corus R&D department), Bernard Blum, Lind and I were seated around the long table of the divisional office. After a Labour Party electoral video was shown we were asked what we thought of it. The embarrassed silence of the audience was mainly due to some passages in the emphatic commentary about the 'new knowledge economy'. We were obviously all workers in manufacturing and in the video no mention had been made about industry. When Mr. Blum skilfully got around the initial *impasse*, the debate started on the recent shift of the ISTC towards a 'community union'.

Man, sitting in his wheelchair as chairman of the seminar, bewildered the audience by stating that the ISTC was rethinking 'its politics centred on the needs of able- bodied working men' and focusing on 'the disabled people within the community of manual workers'. This was the reason why, according to him, the ISTC was increasing its links and collaboration with the NLBD (National League for the Blind and Disabled) and with the Catholic parishes of South Yorkshire. Blum followed Man's abrupt opening by saying that 'a steelworker can put his brain in the locker after work, but a disabled person is disabled 24 hours a day' and that for this reason disabled people showed a higher degree of social concern and awareness. After him, Steve Seldom reported the results of a recent ISTC national questionnaire among its members[159]. The survey clearly indicated that 65% of the respondents of the questionnaire performed activities in their spare time, and that the most popular activities were 'Social and Sport Clubs' (68%) and 'Charity Work' (41%). Besides, 60% of the respondents wanted more involvement of the ISTC in the community and the majority of these wanted the ISTC to financially support local sports and social organisations and charities. Summing up the intentions of the two speakers, Blum concluded that the ISTC had to shift its focus 'from the workplace to the community of families outside it and from the working men to the 'weak', 'poor' and 'disabled' members of this community'. Consequently, more

[159] ISTC in the Community: Questionnaire Result and Analysis' Jan. 2001.

than focusing on negotiating working conditions with the management, the ISTC intended to fund charitable initiatives and local 'cultural' events and associations.

Asked what we thought about it, Jack enthusiastically agreed, claiming that 'education' more than 'work' is the key of workers' emancipation. Blum agreed, quoting a recent statistic according to which one third of British steelworkers are illiterate. Bob was confused by the 'communal' focus of the debate, given that he worked in a multinational company. He told us of the 'enormous cultural differences' between Dutch people and British people in the Corus R&D department and lamented the fact that 'global' capitalism is counterproductive for the 'local economy'. For Bob a community union should protect local jobs, instead of boosting – like ISTC had done with Corus – international mergers.

Denis MacShane drily rebuked him with the observation that international consolidation 'is a structural fact'. The solid logic of the word 'structural' silenced the audience. Maggie, a union representative in a small plastics firm in Rotherham, disagreed with the idea that the ISTC should retreat from the shopfloor and stressed the need for shopfloor militancy in her firm, where five workers had recently died from handling a chemical substance recently introduced in the company's production process. Blum reacted to Maggie's vigorous statement, cautiously explaining that 'it is not the intention of the ISTC to interfere with the management of firms, but only to ensure that the companies act within the legal framework established with the HSWA, the 'Environmental Protection Act' (1990) and the 'Health and Safety Regulation' (1983).

Lind objected that this legal framework was not enough and that employers still enforced dangerous working practices on the shopfloor since they were not personally legally responsible in the event of industrial accidents. Blum replied that 'it is in the nature of industry to rely on dangerous work and this is one of the reasons why we as a union encourage capital investments on the shopfloor that inevitably reduce the industrial workforce'. I objected that capital investments don't necessarily involve job losses, and added that the problem in UNSOR was that investments and decisions regarding the firm were not taken with the consultation of the workforce.

MacShane addressed the audience with an ironical twist 'we are grateful to our Italian student-turned-worker (Man and Seldom laughed), but we have a very peculiar industrial structure in this country which naturally cuts out medium-sized firms like UNSOR. The real game of industrial democracy has to be played now at the global level'. Blum carefully readjusted the debate, Denis MacShane agreed to talk personally with the owners of UNSOR and the meeting was declared concluded.

During the fieldwork, I liked to pop into the ISTC divisional office and have a chat with Mr. Blum. The several rooms of the office, encapsulated in a post-modern steel framed building, were always empty, the three secretaries were always good humoured and Blum was always available. In fact, on an average day, Blum would arrive at the office at 9 a.m. and deal with some worker's claim concerning industrial compensation, disciplinary matters and redundancy packages. He would spend the rest of the morning talking on the telephone with the general office in London and after lunch he would discuss with Anne – MacShane's secretary – matters of local and national government. Blum radiated calm and ironical distance, and his daily tasks were punctuated with long pauses, coffee breaks and chats with the secretaries. Blum liked to recall with me his struggles at the BSC coke ovens, to remind me of the lung problems that he suffered and of the 'terrible effects on the brain of manual labour'. He liked to take himself as an example of how things should go for the working class. He had been illiterate, ill and had worked in one of the most dangerous departments of British Steel and now he has 'reacquired dignity in himself'. He has an office, three secretaries, a bookshelf filled with books and interesting people around him. 'You see Max, the manual era is finished and manual workers must reconstruct their lives outside the workplace. I know it's difficult for them because they have been 'institutionalised', but as a trade union we have to help them to find gratification in activities outside the shopfloor. The era of slavery is finished. Now the working men must cultivate their higher instincts'. When Blum finished the sentence, I couldn't help glancing at Tony Giddens' 'Third Way', sandwiched between Oscar Wilde and Shakespeare on Mr. Blum's bookshelf. As a social thinker, Blum terrified me because he had thrown himself into the post-industrial sociological debate with enthusiasm and intellectual avidity and because he was determined to pass his sociological vision right down to 'the bottom'. Luckily enough, Blum spent most of his time at the divisional office, sharing his 'farewells to the

working class' with the secretaries, Anne and the other divisional officers on their rare appearances in Phoenix House.

Conclusion

Amstrong, 'the missing link', describes the workers' perception of their labour as a 'philosophy of work'. In this chapter I have claimed that this philosophy of work encompasses practical knowledge – images and movements incorporated in the body – mental models, family and personal histories, notions of power and authority and theories of historical development. All these dimensions fragment the employees 'philosophies of work' into multiple variants of the conflict between capital and labour. Nevertheless, in order for capitalism to be successful, it needs to create 'consent' among the workers and therefore to build a common understanding of 'work' and of its social and technological dynamics. As Burawoy points out, capitalism relies precisely on a carefully balanced equilibrium between 'fragmentation' and 'consent' of the workers, regarding 'what a good job is'. Indeed, at the end of my fieldwork, I was more struck by the differences than by the similarities among the workforce and intrigued by the fact that from such difference, consent could arise.

In some cases, fragmentation takes place *between* departments, and can be attributed to the layout of the machines, wage structure and organisation of labour, as for Burawoy. For instance, if the melting shop is dominated by the time of the furnace, the rolling mill is isolated from the former and self-enclosed in an endless time of the break-room, whereas the cold department is frantically projected into the time of the market. In the finishing department, the boys of the grinding bay conceive of production as fragmented into isolated, self-sufficient productive spaces, informed by the rhythm of the market and originating from their individual efforts, and the 'men' conceive of it as structured along the mechanical trajectories of the cranes and dictated by the customers' orders. With regard to the economics of production, the ingots abandoned on the rolling mill were 'costs' for Charlie and a 'company asset' for Mr. Garrett; the cold department conceived of the furnace as 'a huge electricity cost' and the melters considered the cold department a 'big drain of cash flow' in bonuses and overtime and shift allowances.

In other instances, fragmentation takes place *within* departments, where, in the words of Charlie, 'people who do the same job are not necessarily of the same class'. Charlie's claim seems to disconfirm Burawoy's argument of the relative autonomy of relations of production from the external world and suggests that the personal background of the workers impact on their social relations and political awareness on the shopfloor. For instance, Lind's political awareness and perception of work at Bay 2 was different from those of his mates due to his personal background. In fact, the 'ghost of death in the pit', his father's commitment in the Miners Rescue Team and marginalisation in the mining community of Kiveton Park after the miners' strike gave Lind the motivation to become a health and safety rep and the ability to deal with the daily political contradictions of his small group of workers. His son's mental disability and Lind's asthma give him a special predisposition to deal benevolently with Sean's disfunctionality on the shopfloor. Besides, his knowledge of the historical struggles of the Wire Workers' Trade Union – one of the most unskilled trades incorporated within the ISTC – against cuts, suffocation, blindness, amputations and deafness, and against the capitalists' attempts to intensify production, makes him aware of the dangers of the intensification of the rhythm of work. Nevertheless, Lind's attitude towards work, strongly contrasted with the attitude of his younger mates.

Indeed, often in UNSOR workers in the same department have different understanding of the technological, organisational and economic aspects of production. For instance for Phil, 'melting' is a technology of fire, that involves planning, listening, intuition, circular readjustments and constant learning. For him, the social relations on the shopfloor are both fluid and hierarchically linked to the circular time of the fire. On the other hand, the labourers work following the linear sequences of manual tasks between two heats and conceive of their working relations as egalitarian. They run against the time of the fire in their attempts to save effort and densely re-compact themselves between the pit-hole and the break-room. Unlike them, Heaps follows the electric indicators of the furnace, the schedules that emerge in large prints from the small computer on the melters' desk, and the cyclical fluctuations of the price of energy and alloys taking place in the world market. In economic terms, the melters conceive of profit as linked to the quality of the heat; Heaps, as linked to the low costs of raw material and electricity; the labourers, in terms of increases in sales; and the quality

department, in terms of standards of production. This fragmented shopfloor culture seems to be related to the fact that the workers read the technological system and the labour organisation following their subjective notions of 'labour' and 'capital'.

For instance, Mr. Heaps' failed attempt[160] to introduce the aluminium pump machine in the melting shop derived from his conception of 'capital' as a 'labour-saving machine' which conflicted with the melters' view of the interconnections between their work – and bodies – and the furnace. In fact, for Phil and Dave 'capital' is not separable from 'labour', the former being the mixture of knowledge, images, objects, actions, conversations and social interactions connected with the functioning of the furnace. In the labourers' view, 'capital' is the furnace and its despotic grip on the social organisation of the shopfloor. 'Labour' is measurable in the 28 ingots lined up in the pit hole for every heat, perceived through the cold of the water and of the clay, and of the heat and sparks at the end of the heat, and controllable through their silent slowing down of the group's efforts. Similarly, in the billet mill, 'capital' is incorporated in the capricious breakdowns of the bridge, symbolised by the awkward heterogeneity of its mechanical parts, by the cracks on the rolls and on the panel glasses and controlled by the fitters, whose appearance on the rolling mill clearly reflects the productive strategies of the company. In the cold department, the 'boys' are 'capitalist' to the 'men' and to the wire workers, their higher wages and social isolation being a sign of the company's reliance on the finishing process and their labour being objectified in the bonuses and allowances generously given to them by the firm. As I have argued before, fragmentation partly serves the interests of the owners because it transforms the conflict between 'capital' and 'labour' into a conflict between different perceptions of 'labour' and 'capital'. Nevertheless, at a first level of analysis, consent was re-aggregated through the implementation of flexible working patterns that transformed the workers' fragmentation into a generational conflict between 'cold' and 'hot' workers and therefore the conflict between 'labour' and 'capital' into a conflict within 'labour'.

As this chapter has shown, UNSOR reacted to the aggressive market strategy of Corus by progressively outsourcing the melting of steel and intensifying production in the

[160] I call this attempt 'failed' because the new machine could not work without replacing the whole furnace and a total restructuring of the melting operations. The replacement of the furnace was ultimately impossible, given that the UNSOR furnace was unique in its small productive capacity.

finishing department. This strategy was reflected in the company's organisational policies. In fact, the owners introduced numerical, temporal and functional flexibility in the cold department by increasing the workers' nominal and real wages, by retraining them to perform auxiliary tasks, by introducing team-working patterns and by recruiting a literate and non-local workforce. For instance, functional flexibility at Lind's bay was aimed at training the labourers under his supervision to become independent from Mel's craft skills, and to make them directly accountable to the general manager of the cold department. In the long run, this would have transformed the workers of Bay 2 into a 'team' whose supervision by Lind was superfluous. This explains Lind's strong opposition to the intensification of production at Bay 2.

In the hot department, functional flexibility was reached by introducing team-working in the rolling mill and through technological innovation in the EAF. As I have shown, in the rolling mill the introduction of team-working did not make labour more flexible but more rigid, and did not increase productivity but decreased it, whereas in the cold department, team-working both intensified production and increased the workers' adaptability to flexible working patterns. In this way, the introduction of flexible working patterns, fragmented the workforce between the capital-intensive and under-productive work of the hot departments and the overstretched and labour-intensive work of the cold one[161].

The workers of the two departments read this contrast mainly along generational lines. In fact, according to the hot workers the younger workers of the cold department earned almost double what they did because they had been co-opted into the company's strategy of maximising the sales of low quality steel through their involvement in the intensification of production linked to their agreement 'to opt out'. 'The young workers of the cold department stay at UNSOR only for money and to repay the mortgages on their homes' was the usual comment of the hot workers when they were asked what they thought of the grinders. The cold workers thought that the hot department performed 'jobs of the past', that its older workers were unqualified and unwilling to

[161] Pollert (1991) stresses the same conflict between hot and capital-intensive technologies of production and cold and labour-intensive ones in her case study of the Choc-Co food manufacturer and shows that the workforce translated this conflict into a gender conflict.

work hard and unclear about the simple truth that people work for money and not for other kinds of personal motivations.

Within each department, the managers fostered the fragmentation between cold and hot workers[162]. For instance, Williams opposed the 'long-term and difficult skills' of the hot department to the 'short-term and easy' ones of the cold department; Heaps considered the grinders' lack of experience as 'economically draining for the company'; Garrett stressed the weight of the electricity costs of the furnace on the company's cash flow; Alan thought that the formal education of the grinders was inconsistent with the 'natural laws' of the shopfloor; Asthon, that the old fashioned work practices of the melters lowered production standards; Bowers, that the work and the people at the furnace were a 'prehistoric remain'; and Heaps, that Bowers' 'engineered mind' was creating chaos on the shopfloor.

Thus, if this fragmentation of the workforce partly assured the co-operation of the finishing department with the owners' economic strategies and smoothed the contrast between owners and employees through the mediating role of the managers, it did not assure the co-operation of the hot workers or the co-ordination between the melting process and the finishing one. In fact the company's market strategy was still centred both on the melting and on the finishing process and therefore required the smooth co-ordination of these two productive phases. In order to obtain an overall consent an overarching category – understood both by the cold workers and hot ones – was needed. This category would present the necessity of the workers' exploitation as a free choice and the consent of 'labour' to 'capital' as a natural fact.

I will call this category the 'dialectic between danger and boredom'. In fact, all the workers of UNSOR agree on which jobs are dangerous and which are boring. Melters, rollers, and labourers are notoriously 'the dangerous classes'. Not only are their jobs dangerous, but they also seem to have a sort of osmotic relation with danger so that they behave dangerously too. Their shopfloors 'look' dangerous, they joke and play with dangerous objects (fire, hot steel, knives) and talk of dangerous things. By contrast with them, the grinders, ancillary workers and wire workers notoriously perform boring and

[162] Edwards (1986), R. Hyman (1987) have stressed the role of management in mediating the conflict between labour and capital.

repetitive jobs, their shopfloors are impersonal, their jokes are innocuous, their behaviour is predictable and their beliefs conventional.

This conventional picture fits in the workers' perception of the generational divide between the hot and the cold department, where the former are mostly divorced 'men' and the latter inexperienced 'boys' or 'family husbands'. This workers' perception of the generational and marital divide between the cold and the hot departments, made them accept the owners' productive strategies uncritically. The intensification of production in the cold department, was accepted uncritically because its younger workers, with a reputation for formal education, lack of political prejudices, and physical vigour, were considered to be better equipped to perform stressing and labour-intensive tasks, and therefore to be given overtimes and higher bonuses. Similarly, the incremental reduction of production in the hot department – due to the company's strategy of subcontracting it – was attributed to the bad reputation of rollers and melters, to their ageing bodies, and to their divorced marital status, which made them 'irresponsible' in the eyes of the workforce. Thus the intensification of production in the cold department and the slowdown of production in the hot one, was perceived by the workers as 'a natural fact'; the former mirroring the physical strength and the role of male breadwinner of the younger workers; the latter mirroring the deterioration of the bodies of the older workers and the fragmentation of their families.

This conventional picture of cold department jobs as 'boring', and hot department ones as 'dangerous' is misleading for two reasons. First, because repetitive jobs are in fact extremely dangerous, as Lind and Garrett had realised. In fact, if lethal accidents are more common in melting shops and rolling mills, the grinding and wire working departments have the highest number of occupational hazards[163]. Indeed, work is more strenuous and wearing in the cold department than in the hot one and this is the reason why the company recruits only young workers in the former.

The second reason that the opposition is misleading is that danger and boredom are not objective conditions but subjective states of mind. In fact, not only does Roger often 'get bored' when he stands in front of the furnace and Ash 'got bored' of walking

[163] See 'Health and Safety in the Steel Industry. A Workers' Handbook'. 1999, International Metalworkers Federation.

among the red ingots on the broken bridge, but Lind was also constantly worried about the dangerous trajectories of the spinning wires, whilst the 'men' of the packing sections constantly pointed out to me the invisible dangers hidden in apparently simple handling operations. In fact, paradoxically, the most dangerous jobs at UNSOR, the job at the acid tank and the work of the contractors, are also considered the most boring of all.

As W. Baldamus (1961) has intriguingly demonstrated, the circumstances under which manual workers perceive and regulate their efforts are highly differentiated because what they perceive as differences between boredom, fatigue and danger are highly subjective. Labour-intensive and repetitive tasks bring the workers to naturally intensify their production in order to defy boredom. Similarly, the rollers defy boredom by increasing their dangerous tasks, which replace the movements of the broken machines. In both cases, boredom is a worker's self-defeating mechanism that increases productivity as a response to already high productivity or strenuous working conditions. 'Danger' is the result of this curious decoupling of the objective conditions of work from their subjective perception, and it appears every time the workers lose the connections between their body, the environment around it and the task they are performing.

As a matter of fact, the owners, through the Health and Safety department, structured the discourse of danger and boredom on the shopfloor in order to gear its productive activities to the company's market strategy and to legitimise the company's subscription to the paradigm of flexible production. The discourse of danger and boredom was used to cut labour in the departments that were becoming obsolete for the company's market strategy and to intensify it in the 'core' departments. Firstly, Heaps replaced the 'dangerous' labour of shovelling alloys into the furnace with a new machine. Besides, as I have already shown, the detection of 'cancerous' substances in the furnace and of plutonium in the scrap ramp often paralysed the activities of the melting shop. Secondly, production in the rolling mill was reduced by using Garrett's 'discourse of danger' and claiming that the poor conditions of its handling equipment and the exhausted rolling mill were 'in breach of health and safety regulations' and that Antonio and Jim could no longer cope with the mechanical dissolution of the rolling mill. Thirdly, team-working was introduced in the rolling mill as a way of reducing boredom. Similarly, the 'boring'

packing operations of the 'men' were mechanised, and therefore the 'men' intensified their production and lost their collective control over it. Finally, Garrett put a lock on the grinding machines, whose code was known to the 'boys' only (because of their reliability) and transformed the grinding bay into a 'restricted space'. This made the grinding area, its machines and workers autonomous from the control of supervisors and workmates and directly responsible to Mr. Bowers.

By reinforcing the legal framework connected to the HSWA, whilst at the same time undermining workers' trade union rights[164], the state shifted the debate on the workers' control over the shopfloor from the political sphere to the 'medical' one. The ISTC followed the state by concentrating its activity on workers' compensations whilst retreating from shopfloor negotiations. In fact, its transformation from a worker's union into a community union – as I have shown – was intended to mould the interests of the disabled and 'weak' social categories to the interests of the redundant manual workers and to emancipate men from work through safer, capital-intensive and modern workplaces.

As I have shown in the historical chapters, since early industrialisation, capitalists have used the medical discourse of the 'sanitary conditions of the working classes', to press manual workers to intensify production. Interestingly, similar medical assumptions legitimised the consolidation of the factory system in the past and its dissolution, or 'flexibilisation', today. One of these is the 'phrenological' assumption that intense manual labour has impairing effects on the workers' mind. In *The Philosophy of Animated Nature* (1860), Holland claims that

> 'if the nervous fluid is employed in maintaining muscular contractions, it will not flow in the required current to develop or excite the mental powers. A superiority of muscular energy, and its frequent exercise, are incompatible with an enlarged and active understanding' (ibid: 477). Holland's medical theory prompts him to support the modern system of manufactures: 'we have illustrated that the peasants are an inferior class of society. They don't have the quickness of perception, the general intelligence, or the agility of the bodily movements, which belong to a corresponding position in the manufacturing districts; and here we observe again the striking modifications which result from a difference in circumstances. In the latter instance, the more diversified mechanical operations – operations requiring the varied exercise of the mental faculties; conjoined with the frequent

[164] See Ackers, Smith and Smith (1995).

> interchange of sentiment and collision of opinion, necessarily bring into play a greater amount of thought – awaken the nervous fluid to a more enlarged sphere of action; and we perceive its effects in the features and movements of the body. In the middle classes of society we notice the influence of similar causes, differing only in the degree of intellect they excite. We have here the first transition from the imperative requirements of labour, to commerce, manufacture, science, and the arts, activities that stimulate higher faculties of the understanding, a vigour and a capacity of thought which cannot coexist in any other class' (ibid: 377).

The UNSOR owners' belief that 'manual labour' and 'intellectual knowledge' can be separated in production, and their 'humanistic' view that locates the former on a lower level than the latter, seems to recall Holland's medical theory. In fact, not only in the view of the owners, but also of Mr. Blum and Mr. MacShane, manual workers, having dealt with 'dangerous manual operations' and 'repetitive and boring tasks' all their lives, have to undergo intellectual rehabilitation and spiritual purification. This humanist view also implies that 'spirituality' or, in the words of Blum, 'human higher instincts', can be cultivated only outside the workplace. From this perspective, the ISTC's close collaboration with the local church was more consistent with Mr. Garrett's distaste for 'workingmen's brotherhoods' than with Charlie and Lind's Christian socialist utopia of developing 'spirituality' and 'brotherhood' on the shopfloor. In fact, the ISTC's increasing funding of charity organisations and of social and cultural activities of its members outside the workplace, shifted the focus of political participation from the workplace into the local community and reinforced the social scenarios predicted in Tony Giddens' book lying on the bookshelf of the ISTC divisional office. That is, the coming of a new era when the voluntary sector will replace the manufacturing industry and social capital will sweep out the old workingmen's solidarities.

The company's decision to intensify the production of low quality steel – thus transforming an efficient integrated mini-mill into a weak competitor in the global market – was the result of an understanding, shared at different institutional levels, of 'manual jobs' as 'dangerous' and 'obsolete', and of economic development as a progressive march towards de-industrialisation.

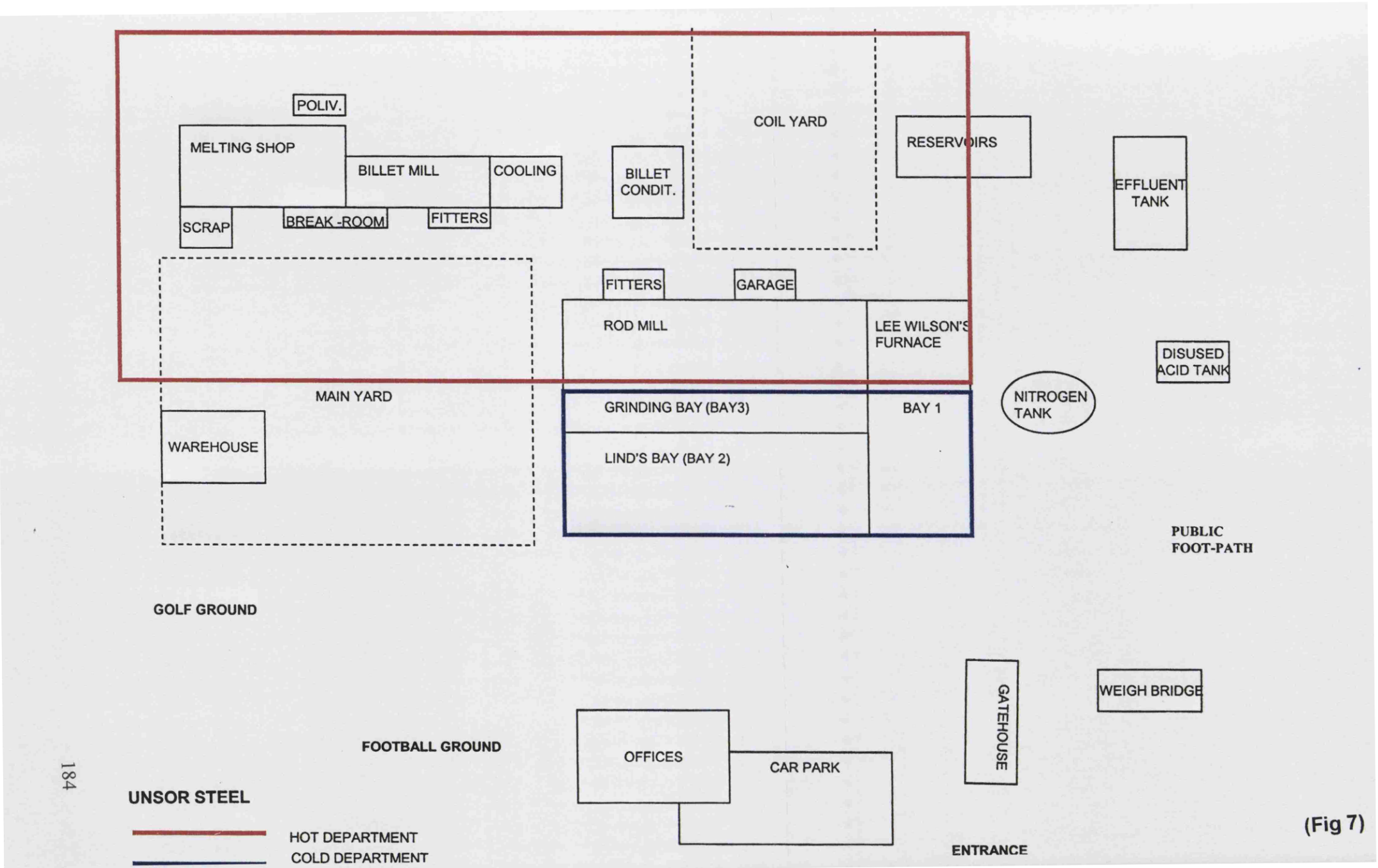
This understanding was also shared by UNSOR workers themselves. In fact, only a few altogether refused the owners' medical rhetoric. For instance, Lind opposed his workmates' attitude of intensifying production to defy boredom; and some rollers opposed team-work by claiming that they did not mind doing 'boring' tasks.

Nevertheless, the fact that the hot department slowed down production and the cold one intensified it generally appeared to the workers as an inevitable consequence of the owners' concern for their safety. In fact, the 'men' perceived the increased capital investments in the grinding bay as alleviation of their muscular pains; the grinders perceived intensification of production in the grinding bay as an empowerment of their muscular strength; and the rollers perceived the decrease of capital investments in the rolling mill, as a sign of the weakness of their ageing bodies. In both cases 'capital' and 'labour' seemed to the workers to go hand in hand, and labour seemed more satisfying where productive capacity was cut (by some rollers and labourers of the furnace) and more fluid where it was increased (in the grinding bay). Thanks to the medical discourse, the fragmented workforce of UNSOR developed a common 'Health and Safety shopfloor culture', and a common motivation to consent to produce.

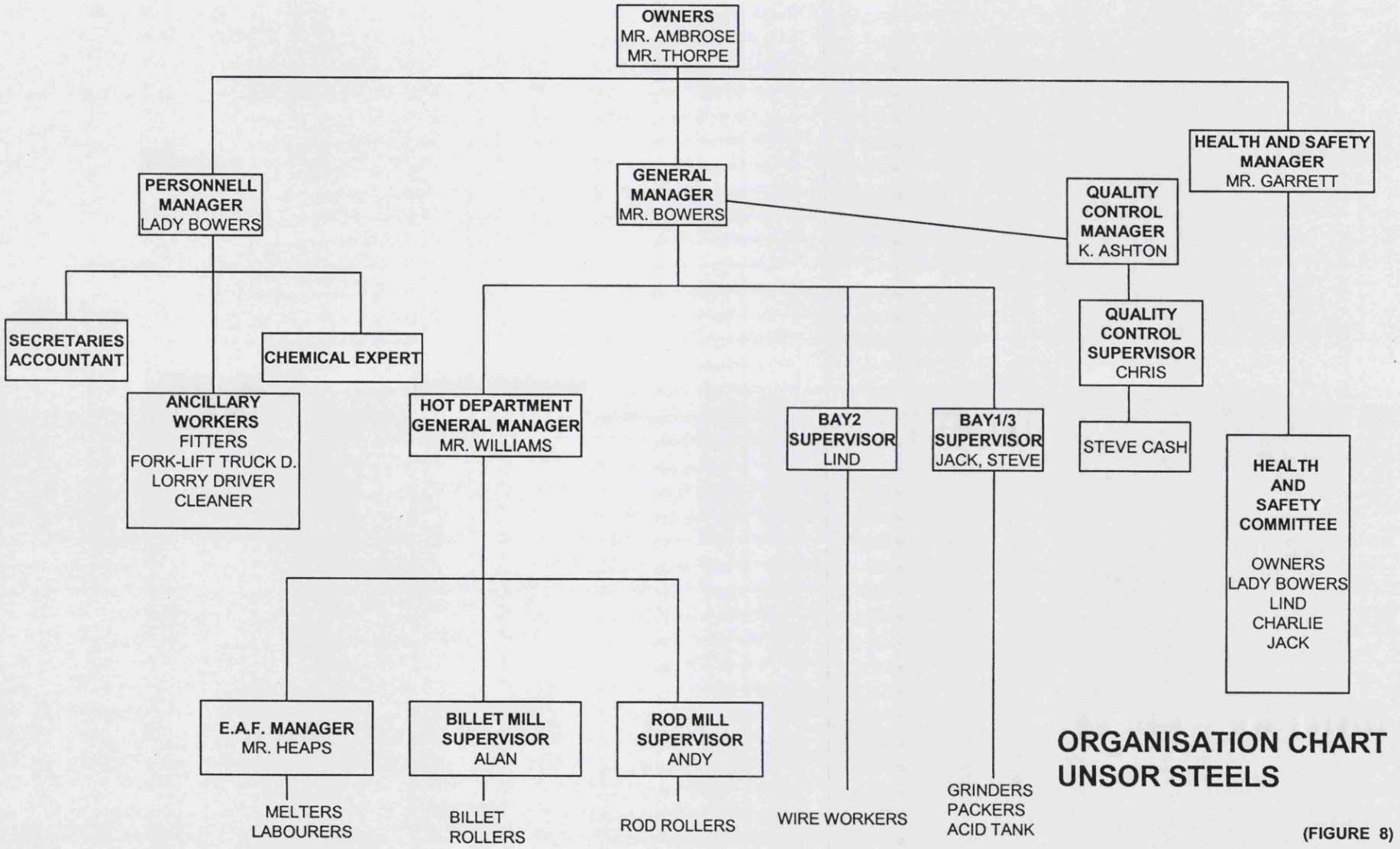
This common consent and motivation to produce ultimately relied on the fragmentation of the workforce along the generational line dividing the hot from the cold department. This fragmentation depoliticised their conflicting 'politics of production' and transformed their different attitudes towards 'capital' into a 'natural fact', connected with biological and medical laws of labour. Thus UNSOR wage structure, organisation of labour and productive strategy, which increasingly polarised the workforce into the young, highly paid and highly productive 'boys' of the cold department and the elder, underpaid and underproductive workers of the hot department, was read by the workforce as the prelude of a new era when dangerous manual work will disappear, 'gods' will fall from the sky, donkeys will be replaced with mechanical trucks and dogs liberated from their cages. In fact, the new era swept out the dangerous jobs of the rollers and melters and mechanised the activities of the finishing department. Today, the new UNSOR appears to managers, trade union officers and local politicians[165] a more modern and safer place, in spite of its increasing labour intensity, of the poisoning fumes of the acid tanks and of the repetitive spinning of the wire workers' drums.

[165] From personal communication with Mr. Garrett, Mr. Blum and Denis MacShane.

Thus, in spite of the rhetoric of the Labour Government that flexible production increases the workers' skills and their control over the production process, in UNSOR, flexible production deskilled the craft workers of the furnace and the auxiliary workers of the firm and increased the labour intensity of the cold department. At the macroeconomic level, flexible production entailed the down- grading of UNSOR's market strategy – from high quality and special steel to low quality steel – and the dissolution of the human and technological capital of the EAF and reinforced the polarisation between steel conglomerates producing steel (like Corus) and the small firms – like the actual UNSOR – that finish it.


POLIV.
MELTING SHOP
BILLET MILL
COOLING
SCRAP
BREAK -ROOM
FITTERS
BILLET CONDIT.
COIL YARD
RESERVOIRS
EFFLUENT TANK
FITTERS
GARAGE
ROD MILL
LEE WILSON'S FURNACE
DISUSED ACID TANK
MAIN YARD
NITROGEN TANK
GRINDING BAY (BAY3)
BAY 1
WAREHOUSE
LIND'S BAY (BAY 2)
PUBLIC FOOT-PATH
GOLF GROUND
GATEHOUSE
WEIGH BRIDGE
FOOTBALL GROUND
OFFICES
CAR PARK
UNSOR STEEL
HOT DEPARTMENT
COLD DEPARTMENT
ENTRANCE

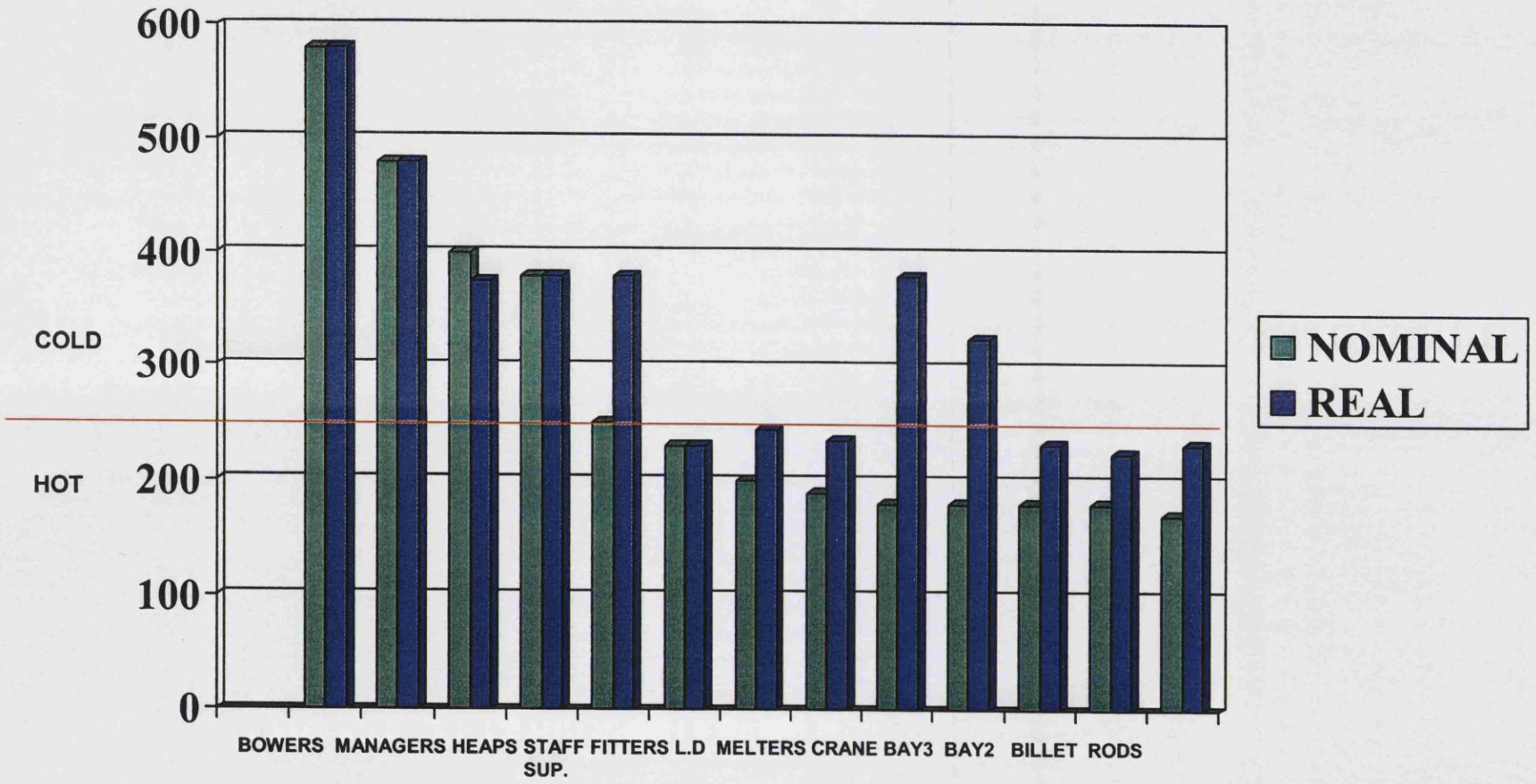
(Fig 7)



ORGANISATION CHART
UNSOR STEELS

(FIGURE 8)

UNSOR STEELS WAGE STRUCTURE



(Fig 9)

Figure 23. Dave at the furnace.

Figure 24. Dave 'slagging off'.

Figure 25. Phil and Dave add alloys into the furnace.

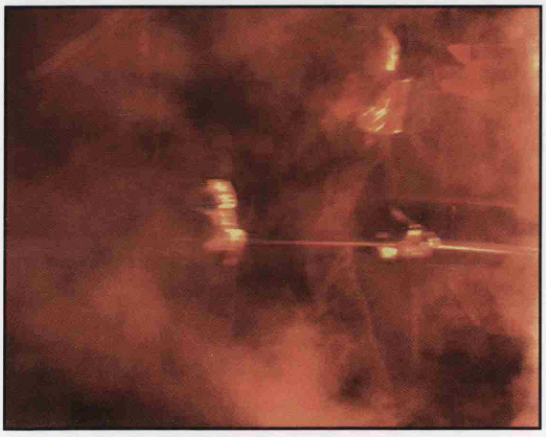


Figure 26. Dave at the furnace.

Figure 27. Phil and Dave at the furnace.

Figure 28. Ferrell puts clay on the moulds.

Figure 29. The Rolling mill.

Figure 30. Close-up of the roll.

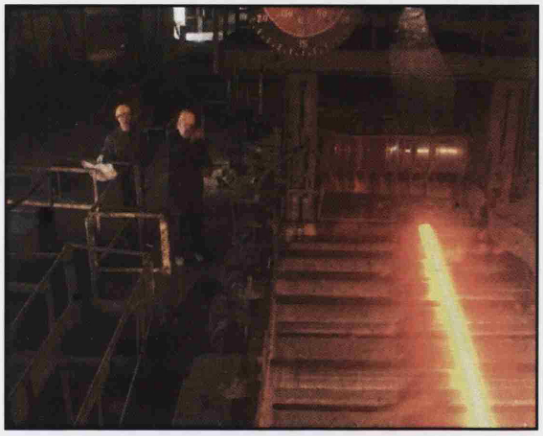


Figure 31. Charlie's view from the panel.

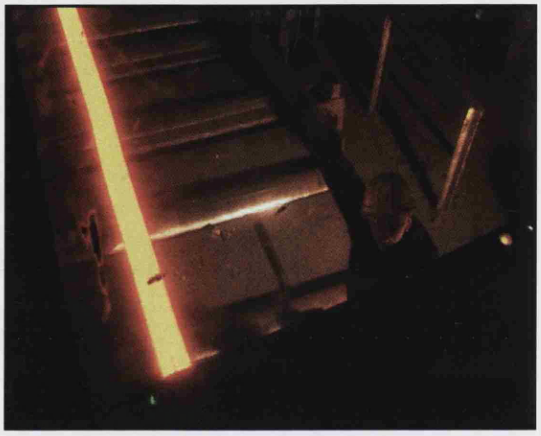


Figure 32. Roger directs Charlie during a breakdown of the mill.

Figure 33. Vision from the panel.

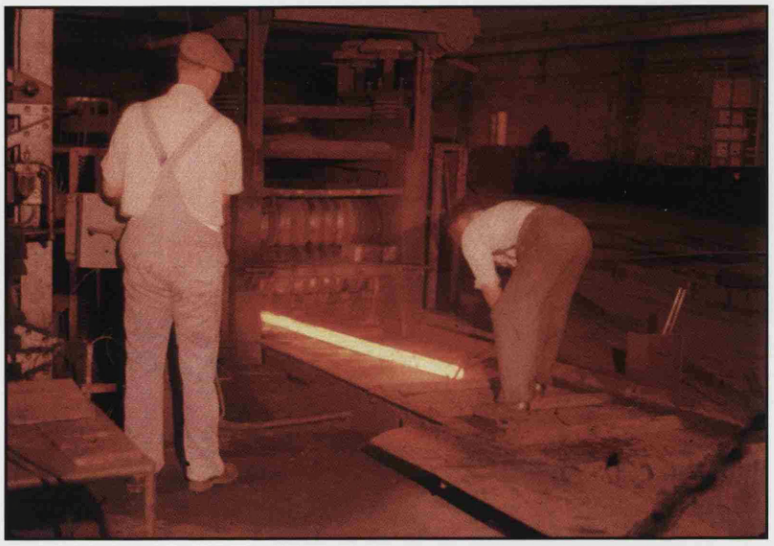


Figure 34. Rolling mill.

Figure 35. Tapping steel.

Figure 36. The 'cogger'.

CHAPTER FOUR: 'MORRIS LTD'.

MAIN INFORMANTS

HOT DEPARTMENT: Teddy, Bob, Tony.
COLD DEPARTMENT: Rob, Alf, Andy.

Introduction

In this chapter, I explore three hypotheses concerning the nature of modern economic institutions.

The first is Harry Braverman's hypothesis that modern factory production incorporates the workers' knowledge into its technological system. In his '*Labour and Monopoly Capital* (1974), Braverman argues that modern factory production implies the separation between the planning of the task – controlled by the managerial apparatus – and its execution left to the workers. This allows the capitalists to incorporate the workers' actions into the predetermined movements of the machines and creates a split between the workers' knowledge and their labour. In my work, I reformulate Braverman's hypothesis in the light of the work of the anthropologists André Leroi-Gourhain (1993) and Tim Ingold (2001). These anthropologists have opposed the intimate, social and practical knowledge associated with the 'techniques' of production, that rely on the use of tool, to the abstract, unsocial and 'external' kind of knowledge associated with modern technologies of production. After a description of the Morris shopfloor, I trace a brief history of tool and steel production and frame the interplay between the 'technique' of tool production and the 'technology' of steel production on the Morris shopfloor. Unlike Braverman, I suggest that the workers of Morris actively manipulate their technical skills to structure their relations in production, rather than develop their skills as a consequence of the firm's technical system.

The second hypotheses are those of E. P. Thompson (1967) and M. Burawoy (1985) on the nature of modern factory production. E. P. Thompson, in his classic study of the effects of industrial capitalism on people's attitudes to time and work, argues that modern machine production implies a transition from task-oriented to clock time, and a differentiation between 'work' and 'life', and that these modern notions of the time and

space of production are ultimately responsible for the intensification of labour in modern factories. In a similar fashion, Burawoy suggests that industrial workers intensify their production by agreeing on piecework rules and organising their production around the wage system. The author also suggests that the workers' consciousness is crafted at the point of production and is 'relatively independent from external systems of social relations'. In the section where I deal with the wage structure and the bonus system of Morris, I show that the Morris workers have different and conflicting notions of profitability and different perceptions of the 'times' and 'spaces' of production, and I relate these differences to their different socio-economic backgrounds.

My stress on the ways in which social and economic processes located outside the factory modify the economic practices and social relations on the shopfloor, not only provides a critique to Burawoy's argument, but also an interesting variant to Polanyi's (1944) argument concerning the socially disruptive effects of the disembeddedness of economic institutions from society. I have already shown in the historical chapters that 'the artisans' of Attercliffe were never fully proletarianised, and that they complemented wage labour with small-scale production and informal economic transactions. Similarly, today, some workers of Morris complement industrial production with economic transactions embedded in the social and economic texture of the neighbourhood. Thus, Morris provides an interesting case of an economic institution which is embedded in society, and which, nevertheless, does not seem to be less exploitative or alienating than other modern factories.

The shopfloor

'Morris' is located along the river Don, where several derelict mills have had a long history of expansions, nationalisations, rationalisations and closures before reaching the calm state of desolation in which they may be found today. These ancient and unsafe mills are still in use, in spite of the fact that the people in Sheffield believe that they are not and that nowadays steel is produced almost entirely on big, modern and fully mechanised shopfloors. One day, following the rhythmical noise of Teddy's hammer, I walked into Morris asking for a job. A big open space approximately 80 metres long

was filled with around 100 machines, the majority of which dated to 1914, whilst a few of them were made in 1860. The overwhelming density of these ancient machines on the shopfloor contrasted with the scattered figures of the men and made me think that this place was a sort of second-hand or scrap deposit. Only later did I notice that the machines were functioning; and much later could draw an invisible line between the 'hot' and 'cold' departments, between their workers and their – at first glance – incomprehensible and disordered actions. After a brief consultation with the others, one of the forgers decided that I could stay and start my apprenticeship on his machine. It took me several months to get used to the noise, temperature and dirt of the shopfloor, almost as long as it took me to learn to forge. Thus, I will start to describe the shopfloor and in the course of the chapter, I will explain why the fact of getting used to it is so important to learning the job.

There are two main entrances to the shopfloor, located in a small street between a 'Sauna and Massage' and a derelict red-brick building. One entrance leads into the office and is used by the manager and by the owner only, whereas the other leads into the break-room and is used by the 23 workers when they come to work at 6 o'clock in the morning. Later on, a huge blue door – kept closed during the early morning – opens slowly as the day unfolds, leaving the air from outside free to circulate inside. This door is used mainly by the workers located in the 'hot' part of the shopfloor who freely walk in and out through it. The workers of the 'hot' department have lost the sense of their bodily *temperature* by working near the fire, but they constantly complain about the hot air surrounding their machines. For this reason, they open the big blue door every morning no matter what the temperature is outside. During the summer, they have the privilege of having big white fans near their machines, which they keep constantly running. The workers of the 'cold' department are always cold during the winter and hot during the summer, constantly complaining about the drafts coming from the big blue door during the winter and about the lack of ventilation during the summer. Thus, a subtle line of drafts and currents divides the shopfloor in two distinctive microclimates.

Hot and cold workers not only perceive distinct temperatures on the shopfloor, but also different kinds of *noises*. In fact, the noises of the hammers used in the hot department are regular, low and rhythmic, whereas milling machines and grinding machines produce irregular, electric and acute sequences of noises that are refracted and

multiplied in the small space where the cold workers are crowded. Noises of the first kind are violent and abrupt, but their regularity and their low tone make them reliable and intimate. In the words of Brian, one of the workers, they resemble the 'heart beat, and you get used to them'. On the contrary, I have never got used to the noises of the cold department, to their distressing high peak tonality and their unpredictable sequences. From the point of view of the workers' health, the former kind of noises produces deafness, whereas the latter produce stress and high blood pressure. Noises and temperature circulate along the shopfloor connecting men and machines together, but also creating fields of contrasts, conflicts and negotiations.

Light is distributed on the shopfloor very unevenly. In fact, the cold department uniformly reflects the sun light coming from the big window overlooking the river and the light from the powerful neon lamps located high up on the ceiling. By contrast, the hot department has no window. It is dark and scattered with feeble neon lights located above each machine and oscillating from the distant roof rhythmically, following the movement of each machine. This division, between darkness and light, is reproduced inside each department where the more skilled workers use small lamps, which they point towards the small pieces of steel they are working on. The more skilled the operations to be performed, the more concentrated the rays of light seem to be on each operator's hands, and the sharper the contrast between obscurity and light. Obscurity – punctuated with sharp rays of natural or artificial light and red waves of heat coming from the ovens – surrounds the hot workers, artificial uniformity surrounds the cold ones. The darkness of the hot department is constantly lighted up by the red waves coming out from the ovens scattered by each machine, whereas the light of the cold department is refracted between the white wall at the back, the blue coolant liquid of its machines and the silver reflections of the polished bits of steel. As a result, the same dark green machines appear to be violet in the hot department and pale blue in the cold one.

Because of the lack of light, dirt, grease and oil appear to be a natural extension of the machines located in the hot department, whereas in the cold department particles of dust are clearly distinguishable in their silver reflections in the light of the sun. Dust can be seen all around the machines, with the same colours as the artificial coolants, the bright yellow chemicals and the blue silver of the polished steel. The hot workers are more

preoccupied with dirt and fumes, and the cold workers with dust. Their antithetical attitudes towards air circulation reflect the different degrees of volatility of their environment and their different perceptions of its cleanliness. In fact, in order to breathe properly, the hot workers need to create circulation, whereas the cold workers need to prevent it. In order to have a clean machine, the former have to dissolve the dirt, the latter to concentrate it in one place. As a matter of fact, the hot workers control the air fluxes either through their control over the big blue door, or through the control of their fans. To prevent both the dust to dirty their clothes and the cold to 'stiff their bones', the cold workers wear blue overalls on top of their normal clothes. Hot workers don't wear overalls and each of them has his own peculiar style of working clothes: coloured shirts opened on their chests, T-shirts tight on their muscles, track suit bottoms or denim trousers. Getting changed is part of the hot workers' daily routine during which they take pride in publicly displaying their semi-naked bodies. They arrive at 5.30 a.m., clock in, open their lockers, warm up their clothes near their ovens and get dressed near their machines. The cold workers arrive at 5.50; they clock in and quickly put on their overalls on top of their clothes.

Thus, sensuously perceived, the technical system expands and dissolves its boundaries into waves of colors and smells, warm spaces veiled with smoke and dark corridors crossed with dust and cold air. The workers perceive and absorb differently the colours, smells, drafts and dust coming from the machines according to their different location in the production process, but they also reshape the production process by individually redefining their boundaries with the technical system.

The workforce

As I show in Appendix 1, the workers of the hot department have a very different occupational, residential and economic background than the workers of the cold department. In fact, the average age of the workers of the hot department is 59; their formal education and qualifications are low (although they have undergone long years of informal apprenticeship); their households have an average of five individuals, two of whom are unemployed, and they are generally the only breadwinners of the family. They have a long family and personal history of labour in the tool industry and of

residential stability in Attercliffe. The average age of the workers of the cold department is 41; they have higher formal education; their households have an average of 1.5 members and their wives are normally wage earners. They come from families of unskilled wage workers in the steel industry, who, as I have shown in my historical chapter, during the 1960s enjoyed higher incomes than the ageing population of artisans of Attercliffe, and shared the same economic and social privileges as the labour aristocracy. As a consequence, they migrated from the Attercliffe slums into the council flats newly built by the Labour administration. When they were made redundant during the 1970s and 1980s, their sons – Rob, Dave, Steve and other cold workers – found employment in the newly expanding tool industry whose several small machine shops survived in Attercliffe. In terms of my classification at the beginning of this section, the hot workers are the descendants of the 'artisans' of Attercliffe, and the cold workers of the 'proletarians'. In the chapter, I show how the workers' different social and historical backgrounds impact on their social relations and labour organisation on the shopfloor.

The market

'Morris' was founded in 1860 to produce cutlery, augers and wood boring tools for railway sleepers. According to Brian, one of the workers in Morris, the job of hand boring the wood for the railway was so repetitive and exhausting that in the past it was used to re-habilitate prisoners. Since the 1920s, Morris's products were sold in a variety of diversified markets. They ranged from low quality wood boring tools for the expanding British railway system, to high quality tools for woodworking, and table knives and cutlery for a small niche of aristocratic consumption. With time, Morris ceased its cutlery production and polarised in two extreme market segments: precision tools and low quality tools for railways. This latter segment of the market assured the survival of the firm until now, in that it counterbalanced the progressive decline of the market for precision woodworking tools. In fact, since the 1920s, the tools of Mr. Morris were exported to China, Africa and India, where they are still used today for Railway construction. In these countries, according to Bill, the previous fitter in 'Morris', 'workers are like slaves' in that they still hand bore the holes for the railway

sleepers. Bill cannot give me any rational explanation for the fact that both 'London Transport' and 'London Underground' are still among the firm's customers.

Morris sells its tools in small orders and to several customers, and this market diversification allows it to survive in times of economic stagnation. Its most successful product is the 'bit that makes a squared hole', used by very skilled DIY workers and that, in spite of my initial suspicion, really makes squared holes. The 'chisel bit' is sold to B&Q through CISCO, a small firm that was built during my fieldwork inside the Morris' shopfloor under the worried glances of the workers. CISCO is also owned by Mr. Greid and produces with two CNC machines and ten workers several precision bits that it sells to local DIY stores. If CISCO covers the high segment of the market, Morris covers the low one, selling its low cost tools to a variety of local customers (machine shops, tools shops, fitters). Because of the low prices of these products, and the high fixed costs of production (this latter in fact, includes the hidden costs of producing for CISCO) Morris produces at a loss and for this reason, according to some of its workers 'it's not an economic place'. Apart from this primary market, the hot workers sell or exchange their production in a variety of hidden markets: Bob fits the machines in several firms of the area and subcontracts, with Tony and Brian, semi-finished products to small firms of the area, Teddy trades alcohol, and they sell broken machines to local scrap dealers. As I show later, Mr. Greid tolerates these informal transactions by part of the workforce, as long as the production of chisel bits runs smoothly.

Thus, from the point of view of the market analysts, Morris's survival represents an economic oddity. In fact, the firm survives with its sales in the secondary, less profitable and hidden markets, whereas its economic deficit is due to the high costs of production associated with its high quality 'chisel bits'. Nevertheless, the fact that Morris allows Mr. Greid to evade taxes, partly explains Alf's economic puzzle regarding 'why places like Morris still exist'. In fact, the separation of CISCO and Morris in two distinct juridical entities, allows the owner to shift income and workforce between the two shopfloors. By fragmenting the workforce into two legally distinguished firms, the owner benefits from legal facilitations accorded to small firms. In fact, firms with less than 20 employees are not compelled to compile balance sheets, and are granted tax relief and reduced duties in terms of employees' welfare. Besides, by selling the most profitable products through CISCO, and therefore by keeping Morris at the 'break-even'

the owner benefits from the exoneration from the minimum wage legislation granted to firms facing financial hardship. Thus, Alf's claim that Morris 'is not an economic place', underestimates the profits that Mr. Greid's makes through CISCO and the lower organisational and welfare costs that, due to public legislation, small firms like Morris sustain.

The production process[166]

'Morris' produces roughly 20 different kinds of wood boring tool. Each kind of tool can be produced in approximately 5 different sizes. In the hot department, the process of production remains constant for each kind of bit produced and is as follows: (1) Big Dave chops long bars of steel into smaller ones and distributes them into small metal boxes. (2) Teddy, Brian, and Steve gather a few chopped bars and heat them. When the bars are 'orange' inside the oven, they hammer them into a flat shape. (3) Tony twists them. (4) The twisted tools are left to cool down on the floor for at least two hours before being processed in the cold department. In the cold department the production process varies according to the kind and size of bits to be produced. For a standard 'Irwin bit', the production process is the following. (5) Every morning, John – the manager – gives to big Dave a small piece of paper containing the daily orders. Accordingly, big Dave brings a few boxes filled with shaped bits to the three 'rough' grinders who smooth the surface around the top and the bottom of the bit. (6) The bit is processed by three milling operators who cut its initial part 'at length' and make a small hole inside it. (7) Alf works the central part of the tool to its final size at his centreless grinder. (9) The bit is roughly polished by Andy. (10) Philip or Kevin 'file' it, that is, hand saw the tool, in order to give to it its wood cutting properties. (11) The bit returns to Andy who polishes it until it reaches its 'shining' state. (12) Ready to be sold in the market, the 'shiny' is transported into the warehouse, where old Graham packs it and records it in his 'counting book'.

A few features of the production process can be highlighted. First, the 'hot' and 'cold' departments have two completely different rhythms of production. In fact, the rhythm of the cold department is determined by the fast pace of the grinders, who perform the last

[166] **Film time code: 5' 47'' - 25' 57''.**

operation before the bits enter the warehouse, where old Graham counts them. On the other hand, the hot workers produce slowly and evenly, following the pace of their machines and gather their finished bits in the cooling area. Here, they can stay for several days before being processed by the cold workers. Thus, the cold workers follow the fast rhythm of the market, whereas the hot workers, the slow pace of their machines. Second, the technical operations of the cold department are mutually interdependent, short and easy to perform and this fact allows the workers to rotate their jobs on different machines. Third, the cold workers adapt their production to new orders every morning, whereas the process of production in the hot department seldom varies. In fact, the hot workers produce five standard sizes according to a weekly schedule and the cold department transforms these standard sizes into more than twenty customer specifications, according to daily orders. As a result, each worker of the cold department works on different kinds of product. The firm's ability to supply local customers with small batches of tools 'just-in-time', is a fundamental competitive advantage of Morris. Nevertheless, this fact makes production in the cold department unpredictable and, for some matters, uncontrollable. Fourth, all the hot workers start at 6 a.m. whereas the cold workers are free to come to work at any time provided that they work eight hours per day. Finally, some hot workers 'privately' do some subcontracted work for other firms of the neighbourhood and independently from the rest of the workforce. As I will show later, this is due to their authority on the shopfloor, and their control over the production process of the firm.

The social history of the machines

As Mauss (1979) pointed out 'when a generation transmits to the next the science of its gestures and of its manual acts, there is as much authority and social tradition as there is in linguistic transmission'. In fact, on the one hand, machines dictate fixed sequences of practical tasks that workers learn to perform mechanically and non-linguistically. On the other hand, machines condense social meaning, rooted in the past and transmitted linguistically in different contexts of the workers lives. Similarly, the workers of Morris perceive and describe their technical system and their machines both in terms of sequences of functional properties and in terms of social history. First, the workers divide their shopfloor into a 'hot' and 'cold' department. In the 'hot' department each worker relies on small ovens to melt bars of steel to transform steel from a hard state

into a soft one. The use of the oven involves some kind of knowledge of the properties of the fire and heat, of the chemical composition of the raw steel in terms of its 'grainy' texture and of the physical relations between 'redness' of the bit and its exact degree of hardness. Besides, workers describe the hot and cold department as respectively 'forge' and 'machine shop'. Forging involves the transformation of molten steel into a shaped object through the use of a hammer. In Latin mythology Prometheus – a clever semi-human god – stole the fire from the gods and gave it to the humans, teaching them how to forge metal. For the first time in history, humans challenged the gods with their new power of transforming unshaped metal into shaped tools to be used in agriculture and war. From the point of view of the technology adopted, the Morris forgers are a modern version of the medieval blacksmiths who used to forge iron by percussion. During the middle ages, as civilisation spread the use of cutlery in court etiquette (N. Elias, 1994), the small hammers of the blacksmiths transformed themselves into giant water-powered hammers operated by several workers employed by the Earl of Fitzwilliam for the mass production of knives and forks for the tables of the international aristocracy. At the end of the18th century, merchant-capitalists organised the production of tools and cutlery in small workshops and when Marx came to Sheffield, he described the newly patented 'Ryder hammer' as an anthropomorphic mechanical creature whose four hammers could be used in strict sequence by individual operators. The Ryder hammer is still used by Brian, Teddy, Steve and Tony in the hot department together with other ancient hammer machines whose flexible arms, rotating junctures and elliptical movements are a mechanical reproduction of a human moving hand.

In spite of the fact that 'cold department' and 'machine shop' are used as equivalent terms, in the cold department two techniques of production are clearly distinguishable: the grinding technology and the milling technology. The eight grinders of the cold department produce flat, cylindrical and other surfaces by revolving the tools between their fingers and an abrasive high-speed wheel. In the past, grinders were independent workmen tightly connected with each other in a web of small transactions of semi-finished products located along the same chain of production and customarily regulated by the local aristocracy. With the increase in the scale of production of tools, milling machines developed as mechanical versions of the grinders' hands and a transformation of their circular movement of friction into a sequence of horizontal cutting operations. Horizontal cutting allows tools to be worked with more precision and on a bigger scale

than with grinding. As E. P. Thompson reported (1967: 279), at the end of the 19th century a new category of working class – the 'mechanics' – replaced artisans and grinders in the production of modern tools and weapons. Milling machines consist of two small arms removing infinitesimal parts of metal by revolving a tooth cutter to produce a profiled surface. A flux of blue liquid runs constantly to capture the thin curls of steel removed on each milling machine and for this reason, milling is said by the workers to be 'wet' technology, in opposition to the 'dry' technology of the grinders.

These three technologies – forging, grinding and milling – represent three different historical stages in the production of tools, performed by three different categories of historical subjects: the medieval blacksmith, the proto-capitalist grinder and the miller of industrial capitalism. Besides, these three technologies are three forms of translation of the functional properties of the human hand into three different tools: the hammer, the grinding wheel and the mechanical cutter. These different technologies in the past not only relied on different forms of power for their motion (fire and human muscle power for the forgers, river power for the grinder and electricity for the miller), but also on a different social distribution of the knowledge of work (E. Hutchins, 1988).

The social distribution of knowledge in Morris

Today, the technological system of Morris partly reflects these three past forms of the social organisation of knowledge, and partly is renegotiated by the workers in their daily interactions on the shopfloor. In fact, the hot department is conceptually perceived and organised by its workers as a blacksmith workshop, where work is individually performed following – according to J. Daugherty and J. Keller (1988) – 'non-linguistic and not codified constellations of practical tasks associated to specific tools'. These authors interestingly highlight three features of the kind of knowledge associated with the manual forging of steel and iron. First, it relies on individual notions of relations between 'means' and 'ends' and thus is knowledge structured into isolated and self-enclosed tasks. Second, it is memorised and retrieved through sets of physical movements and doesn't require 'thinking'– in the words of M. Bloch (1998), it is implicit. Third, when it is communicated linguistically it is not communicated through technical language, but through a language that describes the 'morphological traits of the material processed in terms of colour, shapes and metaphors' (ibid). Similarly, in

Morris, hot workers communicate about their job in terms of 'redness', 'roundness' and 'patchiness' of the bits they are working, or of the 'inner movements' or noises of their machines.

Because of these three factors, the knowledge of work in the hot department is embedded in human hands or tools and socially organised in subjective, fragmented, ephemeral and centripetal spaces of action. More importantly, this knowledge is silent and hierarchical and distributed through the personal status of the elder workers.

In fact, in order to learn to work on Tony's twister I had to follow his actions in the production process and to recognise from the effects of these actions the same meaning that he was giving to them. Thus, my only way to assess my job was to recall Tony's personal judgment, vocabulary and practical understanding of the task that I was independently performing. Secondly, I had to learn about the history of his machine, that had been adapted to different products now disappeared from the market, to different kinds of motion power (river, steam and electric) and to different physical properties of its operators (Tony's small limbs made several prolonged arms necessary). Tony would tell me about the history of his machine – that 'only' started in 1860 – always with wider references to the medieval forgers and to the aristocratic ethos animating the golden age of the Sheffield cutlery industry[167]. This history was also engrained in the very movements of the machine and returned every time I had to set up the machine following the rules that Mr. Morris, who invented the twister, established 150 years ago. Finally, I had to familiarise myself with the domestic objects that Tony located around and inside his machine and to understand how their essence was intimately connected with Tony's work. In fact, Tony had carefully assembled inside and around his machine photographs, calendars, chalk inscriptions, typed letters, mechanical parts, plastic calculators, pages of engineering manuals, drawings, tools and coloured pieces of textile. Thus his machine had became a display cabinet for the collection of old objects, as well as for the production of new ones; through it Tony renegotiated the boundaries between his personality and the technical system.

167 In fact, Tony is very fond of the early history of steel labour that he cultivates by reading books and going to the industrial museum

My apprenticeship on Tony's machine for me not only meant understanding his job through his personality, but also depending on his personality to learn the job. Like all the apprenticeships in the hot department, Tony's authority ended up as a strange kind of paternal friendship that allowed the transmission of uncodified, subjective and ephemeral working practices in a stable, clear and convincing way through the medium of Tony's personality[168]. In fact, the relation that Tony developed with me on the shopfloor, like his relation with Steve and Teddy, was based on the 'respect' that, as a younger apprentice, I had to show him. This form of respect allowed me to gain professional information through intimate interactions and Tony to increase my workload by emotional manipulation. Besides, this form of authority often took paternalistic tones, so that Tony would not only teach me the job, but would also 'protect' me from the danger of the machines; he would not only transmit his working knowledge but also morally educate me to find gratification in my work, rather than in 'money'. Inherited from history, this form of relationship between young apprentice and elder skilled worker regulated the daily interactions of the workers in the hot department.

This relation of power between skilled workers and novices is also reinforced by their different patterns of ownership of tools. In fact, experienced workers like Bob, Dave and Tony rely on precise and self-made tools that make their work both more personal and more accurate. Well-balanced hammers, sharp cutters, graduated glasses and light screwdrivers increase the control over the process of production of the more experienced workers, decrease the amount of 'help' that they are willing to give to the less experienced ones (in fact, Bob claimed that his 'generosity' in helping the other workers was responsible for the deterioration of his tools) and transform unexpected technical interactions into 'private deals' among the workers.

As I discuss later, economists call this peculiar form of interaction of the hot workers 'clan' organisation. In fact, according to them, whenever the workers possess highly specialised and private knowledge, interact following internalised working routines and control their own tools in the production process, their co-ordination on the shopfloor cannot be regulated by bureaucratic norms or market principles, but only through the 'trust' and 'solidarity' that develops between them due to their 'cognitive proximity'

[168] Economists claim that personal indoctrination is the most efficient form of training in highly complex and 'knowledge intensive' organisations (Ouchi, 1985).

and 'shared values' (J. Eccles, 1981; W. Ouchi, 1985; W. Powell, 1990; E. Schein, 1985). Nevertheless, the nature of the 'trust' that the hot workers share with each other has always puzzled me. Suspended between 'friendship and 'authority' this trust never brings them together on the shopfloor, nor outside of it. Rather, it constrains social relations in rigid games of diplomacy, pride and detachment. For instance, why did Brian have to come to me for information about the state of his brother Bob's cancer? Why do they never meet outside Morris? Why have Brian, Tony and Teddy never drunk together at night, in spite of the fact that they all live near Attercliffe? Why do they spend their breaks in isolation? This lack of intimate relations between the hot workers casts an ambiguous light on the nature of their reciprocal trust. Is it an unintended consequence of the process of production, an attitude functional to its smooth unfolding? Or is it a conscious strategy of co-operation?

The seven millers of the cold department organise their knowledge in a totally different way. A milling machine contains two mechanical arms that cut the tools with precision. Workers use two round gears to control the mechanical arms inside the machine. Each gear is framed with small numbers that translate the position of the mechanical arms in terms of space and speed. Besides, on the top of each machine a wooden board dotted with product samples translates the physical traits of the tool to be made into the numbers around the gear that controls the two arms. On each machine, chalk inscriptions translate the speed of the arms into piecework rates so that each operator working on the machine knows with certainty the level of speed below or above which he is not allowed to go. Finally, near each machine, big oil tins are used to collect the web of curled steel removed by the cutter. Inside each tin a white line is drawn to remind the operator of the level of waste consistent with the production speed and therefore with the bonus level agreed by the workers.

Thus, the social organisation of the knowledge of the millers differs consistently from the knowledge used by the hot workers. In fact, the millers translate the tasks to be performed into publicly codified and negotiated linguistic measures. This translation can be made because the movements of the mechanical arms can be mapped in terms of velocity and space, whereas the movements of the arm of the forgers follow criteria of colour and shape (these latter not different in kind, but more difficult to codify). Besides, this translation is made necessary by the fact that in the cold department workers rotate

on different machines whose operations have to be made recognisable using standards common to all of them. Finally, linguistic codification is made necessary by the standardised nature of customer specifications that becomes relevant only in the final phase of production performed in the cold department. The second big difference between the two spaces of knowledge is that cold workers publicly assess their performances with the use of the micrometer – a small U-shaped scale that measures objects in terms of micron that is, one-millionth of a metre – and continuously negotiate each other's task along the production line in terms of infinitesimal numbers or fractions of fingers. In the 30s, the spread of the micrometers on the shopfloors, whose production was under state monopoly and whose control was previously concentrated in the hands of the skilled engineers, meant that the unskilled workers could assess their job and co-ordinate themselves independently from the formal system of authority and assessment. In Morris, the use of the micrometer gives to the cold workers an extreme flexibility in the co-ordination and pushes them into continuous assessments, readjustments, micro-conflicts and negotiations. Workers keep the micrometers always in their pockets, afraid to lose them and with them, their ability to value their job.

Thus, it looks as if 'hot' and 'cold' workers represent two different stages of the relations – highlighted by Leroi-Gourhan (1964) – between 'memory' and 'hand'. Forgers embody their knowledge of work in their hands or in their hammers (small mechanical versions of them), whereas the millers have externalised it into mnemonic supports that are public, linguistic and disjoined from their bodies and linked to the standard qualities of the product. This difference in the way technology of production is conceptualised and socially shared by different workers can also be read as a progressive separation of the meaning of work from the individual body of the workers and into the standardised morphology of the market. Looked at from the perspective of institutional economists, the hot and the cold workers reflect two distinctive forms of organisation – the 'hierarchy' and the 'market' (O. Williamson,1975) – peculiarly mixed in the same institutional boundaries. In fact, in the hierarchy (or clan) the workers co-ordinate their specialised knowledge and personalised instruments through personalistic interactions, whereas in the 'market' the workers co-ordinate their standardised movements and public knowledge through price mechanisms. It is important here to stress that the hot workers are not necessarily more skilled than the cold workers, rather, they organise and transmit their working knowledge differently.

Skills are transmitted personally and in the language of 'morality' in the hot department and publicly and in the language of 'money' in the cold one. Thus, my point is that the technical system does not determine the levels of skills, as for Braverman, but that the workers build up the kind of skills that reinforce their informal culture on the shopfloor. I now show that the technical polarisation between the two departments is reflected in the firm's patterns of authority and wage structure.

Authority

The lack of visible authority on the shopfloor, surprised me since I first arrived in Morris. In fact, both John and Philip, in spite of being respectively the manager and the supervisor of the firm, behave like normal workers and are treated by the other workers like their peers. John lives a few houses away from Tony, and worked in a machine shop in Attercliffe before he became manager in Morris. The workers don't think highly of John. The hot workers think that he is not very skilled, and the cold workers accuse him of working in the interests of the owner, that is, of neglecting Morris and concentrating his efforts and authority with the workers of CISCO only. Cold workers often complain that there should be more 'management of the shopfloor' and criticise not only John for his lack of authority, but also Mr. Greid for staying on the shopfloor between 9 and 10 in the morning only. John does not have specific tasks in Morris, other than distributing the orders every morning, collecting Graham's accounts, and taking them to the accountant of CISCO. Thus, he often ends up 'filling the gap' of some absentee worker like a newly employed apprentice. John's room has a window overlooking Alf's machine and the other window that opens on CISCO's shopfloor, a space hidden from the workers by a long wall running along the shopfloor. According to a worker of CISCO, John can be a 'real bastard', but in Morris nobody respects him. In fact, when Morris goes on short-time, usually a few weeks before Christmas, he visits Tony at home, and asks him 'to tell the bed news to the guys'.

Tony and Bob seem to have more authority over the rest of the workforce than John. In fact, Bob, the firm's fitter, organises the layout of the machines, fixes the firm's piecework ratio, and keeps a copy of the key of the company clock, which he made himself, so that when the workers are late in the morning, he generally agrees to put the clock's hands back, provided that they have good reasons for being late. Bob, Tony and

Teddy have a strong charisma for the rest of the workforce, due to their renowned technical skills, and their important connections in the neighbourhood. In fact, the workers know that at least half of the firms' customers and contractors are friends of theirs. Mr. Greid also appreciates their social connections, due to the fact that second-hand mechanical dealers and scrap merchants supply vital mechanical parts for the machines; local small customers boost the orders in times of financial hardship; and small subcontractors reduce the firm's costs of production. Besides, everybody knows that without Bob the 150-year-old machines would not work, and that without these old machines, the firm would close down. In fact, the versatility of these old machines – and of its workers – allows Mr. Greid to produce small batches of high quality bits, without having to sustain the fixed costs of continuous production of the more modern machines. Bob's control over the pace of the milling machines, and over some important customers and subcontractors, allows him to mix his personal business with the company's business, so that he puts into production bits that he sells personally to his customers; acts as middleman between customers and local producers; and sometimes – as I will show in the next chapter – externalises to 'his' subcontractors bits that are a waste of time, in terms of bonus, for the workforce to produce. By subcontracting the production of these 'cheap' bits, Bob colludes with the cold workers' strategy of maximising the production of bits with higher bonuses. By fixing tight pieceworks for the ordinary bits, he colludes with Mr. Greid's objective of regularising production in the cold department. The slowing down of the firm's intensity of production, allows him, and other hot workers, to deal with their private businesses.

If Bob *de facto* controls the firm's technical system, the managerial function of disciplining the workforce is superfluous. In fact, absenteeism[169] in Morris is very low and, if anything, the workers press the owner to work more, rather than less. For instance when the shopfloor of CISCO was built inside the premises of Morris; or when, in December 2000, the flooded Don inundated the shopfloor, only Bob and Tony were called by the owner to help John to move the machines. The cold workers complained to John that they were workers of the company too, and that – in the words of Alf –

[169] The cold workers are absent from work an average of 10 days per year, and absenteeism in the hot department varies. In fact, Tony, Bob and Brian haven't lost a single day of work, whereas big Dave, Teddy and Steve's absenteeism is difficult to quantify, as their absences are often legitimised by private deals with John or motivated by Bob's private businesses (for instance, big Dave often spends the morning collecting orders from Bob's customers).

'they had the same right to work as Bob and Tony'. Formal training (apprenticeship) is required only in the hot department and given by its more experienced workers. Some cold workers plan to move to the forge in the future, and they often ask Tony, Teddy and Brian if they 'can have a go' at their machines, thus undergoing a part-time apprenticeship at the forge when production slows down in the machine shop. Finally, the workers are recruited through personal networks in the hot department, whereas the machine shop workers who apply for a job in the cold department, are personally interviewed by Mr. Greid, and asked, before anything else, whether they are members of a union. If the recruitment of friends or relatives[170] reduces the turnover in the hot department[171], the turnover in the cold department is high. But this is not a problem, as the job supply is steadily on the increase. Thus, the elder workers perform the functions of recruitment and training in the hot department, whereas Mr. Greid performs them in the cold department. The hot workers' control over the apprenticeship, recruitment, and labour organisation in the forge, creates an internal labour market in the hot department, which is relatively independent from the objective of profit of Mr. Greid. In fact, the forgers have the power to re-employ the cold workers made redundant in the machine shop, provided that they show willingness to 'fill the gaps', as the young apprentices do. It is precisely this ambivalent role of some forgers, of entrepreneurs, managers and workers, that makes them both authoritative and contested in the eyes of the workers, and that transforms the conflict between capital and labour, into a conflict within the workforce.

Some workers of the cold department claim that Philip's role as quality controller and supervisor consists in slowing down, rather than facilitating, production. In fact, Philip finishes some bits that are frantically pushed on his desk by the rest of the workforce at a very slow pace. These bits disappear into the warehouse without the workers being able to count them, and to update their bonus level. If Philip doesn't seem to care for the pace of production of the ordinary bits, he often presses the workers to 'turn out' more chisel bits, and this is the reason, according to some workers, why he works close by Andy's grinding machine and Alf's 'straightening' desk[172]. Thus, Philip's supervising

[170] In the hot department, Brian and Bob are siblings and Teddy, Tony and Bob knew each other since before they came to Morris.
[171] At the end of my fieldwork, four workers of the cold department left (about 1/5 of the workforce). In the hot department, when Bob died, he was replaced by the previous fitter of Morris.
[172] I will explain the importance of these machines in next section.

activity consists in pressing the workers to slow down the production of the ordinary bits that are more profitable for the workers, and accelerating the production of chisel bits, more profitable for the owner[173]. Besides, as I show in the following section, Philip prevents the workers from having a full knowledge of their daily bonuses.

In conclusion, the shopfloor is split into two centres of authority: that of Philip, as a supervisor, and that of Bob, as fitter, personnel manager and entrepreneur. Phil's supervision slows down the production of ordinary bits and increases that of chisel bits. Bob's tight piecework ratios on the ordinary bits also slow down their production, whereas his subcontracting of cheap bits maximises the bonuses for the whole workforce. Thus, when the cold workers set up their machines with the hammers or increase the speed of the cutters, in order to increase the production of ordinary bits, they challenge not only Philip's, but also Bob's authority.

Wage structure and bonuses

There are three levels of wage in 'Morris'. At the first level there are the staff, with a basic weekly wage of £220. At the second level the skilled and semi-skilled workers earn £200 per week. Big Dave – the only unskilled worker – earns £160 per week. The staff includes Graham, the old man who carries small boxes of finished bits from the rack to the 'warehouse' (this latter consists of two long shelves facing the wall at the end of the cold department), John, Philip and Linda, the secretary. Apart from the fact that they have higher wages and redundancy packages, the workers couldn't tell me in what way the staff members could be considered different from them. For instance, nobody understands why old Graham – always helped by someone to carry the small boxes of finished bits from the shelves to the warehouse and continuously busy lighting his pipe in some corner of the shopfloor – should be paid more than the others. This complaint is even more pertinent if one considers the fact that old Graham performs exactly the same operations as big Dave. The only difference is that big Dave distributes dark and rough pieces of steel at the beginning of the process, while old Graham collects them finished and polished at the end of it. But their technical tasks in the

[173] The role of Philip in slowing down the production of 'Irwin bits' – which have higher bonuses – can be appreciated in Figure 11.

process are exactly the same, and they both walk slowly and randomly around the shopfloor.

The secretary, according to the workers, is the only person worthy to be considered as a member of the staff, in that she deals with their wages, sick payments and vacations. Old Linda perfectly embodies their notion of 'staff' as involving the feminine skills of pen writing and machine typing, and inhabiting the secluded and mysterious space of the company office. This latter consists of a room accessible both from the street and from the shopfloor and located right near John's office. The room is divided between two corners, one for Linda and the other – always empty – for old Graham. Linda's corner is filled with spider plants, a pot of small roses, a heavy 1950s typewriter and an equally old black telephone. Apart from the daily activities of Linda, the room is often used by the workers to call home or receive phone calls, or by Philip, John and Graham every time the firm is on short time and the shopfloor is empty, silent and dark. The accounting is done by the CISCO accountant who is said by the Morris' workers to be using a computer. On it, Morris' orders are collected and accounting is properly undertaken. But nobody knows where the accountant's office is and in relation to orders and profit, they claim that John, Philip and Linda are like a 'secret society'.

On top of the basic earning, a bonus adds to the weekly wage. Bonuses vary from £5 to £50 per week, according to the different kind of bits produced. The cold department is responsible for the weekly bonuses for the whole workforce and the bonus level is calculated on the amount of products that 'enter into the warehouse'. The bigger the bits are, the higher is the bonus. Thus, the small and soft bits are considered as their 'butter' that is, easy and cheap work to be spread carefully during the days when there is no work and no particularly rewarding bonus, whereas the bigger ones are at the very core of workers' anxieties, activities and economic satisfaction. Bob fixes the piecework rates by deducing them from the standard qualities of the machines. Cold workers constantly complain to John about the fact that his piecework rates are too tight and that he never shows up in the cold department when the machines break down. Bob claims that he fixes tight piecework rates because otherwise the cold workers would break the machines by setting them up with hammers, rather than with spanners, and by burning the milling machine's arms in their attempt to accelerate production. In reality, tight

piecework ratios on the ordinary bits slow down the intensity of production of the whole firm, and therefore allow the hot workers more time to deal with their private businesses.

The chisel bits and boxes are the most profitable products for the owner, who sells them through CISCO. But for the workers these bits are a great waste of time and money, in that to produce the quantity required in order to get a bonus – that is, more than 400 boxes and 700 bits per week – is virtually impossible. Thus, the strategy adopted by the workers of the cold department is based on two kinds of actions. Firstly, they slow down the production of chisel bits and boxes. Secondly, they regulate and restrict the output on the 'butter' bits while at the same time raising their output on the tight and more profitable bits. Chisel bits are normally small, and for this reason, the workers claim that they get 'bent' often. Thus, one of the ways in which the workers slow down the production of the chisel bits, is to straighten them with a big hammer, slowly and with precision, and to giving them to Andy to grind, several times during the production process. The workers speed up production by setting up the machines with the hammers or altering the correct speed/length ratio of the machine (thus, burning the bit, and wasting coolant liquid).

Nevertheless, it is not easy for the workers to control the bonus system. In fact, there are more than twenty customer specifications of the five standard models produced by the firm, and each variant has a different bonus. Because different individuals work on different customer specifications, the workers don't know the overall level of bonus until they meet, at the end of the day or during working time, to add up all their production. Secondly, some products acquire their final specification only after the finishing phase, performed by Philip, and therefore often the workers don't know which bonus they are working on. Finally, the level of daily bonus is calculated from the amount of bits that 'get into the warehouse' and at least five different kinds of bits get into the warehouse after Philip has finished them, and therefore their informal account by the part of the workforce 'gets lost'[174]. As a matter of fact, the exact level of the company's overall production, and of the workers' bonus, can be calculated only on 'pay day', which takes place on the last day of each month, when the products that are still in stock in the warehouse are counted by Graham and Alf (the workers' shop

[174] In fact, Philip being the supervisor, he doesn't take part in the workers' informal system of accounting.

steward) and the resulting value is matched with the workers' account of production of the previous month. Pay day often involves tense confrontations between Graham and Philip on the one hand, and the cold workers on the other, who often claim to have been ripped off.

My initial time spent on the cold part of the shopfloor was extremely wearing. In fact, I had to cope with an incredible amount of codified information and rules mainly centred on the relationships between the speed of work and the bonus system. First, I had to de-codify and follow the different lengths/speed and speed/money ratios variously inscribed in chalk on the side of each machine. Secondly, I had to count the quantity produced on each machine and add it up to a collective measure of work that was continuously and collectively readjusted, in order to double check the dubious records kept by old Graham. Thus, the knowledge of the production process revolved around the maximisation of the bonus and was aimed at making measurements of quantities and money as clear and public as possible. This worker's notion of public accountability clearly contrasted with the records that old Graham kept on behalf of the owner while hidden behind the warehouse. Generally speaking, economists argue that wages reflect the workers' contribution to the process of production. In Morris, the wages are totally disconnected from it and they rather reflect conflicting visions of profitability and accountability of the workers and of the owner of the firm. For instance, the bonuses of the hot workers are totally independent from their daily production, but linked to the intensity of production of the cold workers. Similarly, the contribution of the cold workers to the process of production is related to the firm's sales, not to its profits. In fact, if their weekly bonus is calculated on the totality of bits produced, their basic wages don't include the chisel bits that are sold by CISCO[175]. Finally, the staff members are paid precisely for their dis-connection from the production process and for their function of gatekeepers, like old Graham and Philip, between the firm and the market, through their control of the warehouse.

If the bonus system doesn't tell us much about the workers' contribution in the production process, it is revealing about the way in which the workers construct their social relations on the shopfloor. In fact, the bonus system creates both solidarity and

[175] Only the chisel bits are sold by CISCO.

conflicts within the workforce. Solidarity develops *within* the cold department from the workers' continuous efforts to build up a collective measurement of their production, and to challenge Graham and Philip's accounts of the production processes. Conflicts develop *between* the cold workers and Bob, and some other hot workers, due to their grip over the piecework system, and to the fact that their private businesses slow down the overall production of the firm.

My evidence provides an interesting variant to Burawoy's evidence that the piecework system and the organisation of labour of the machine shop of 'Allied' crafted the workers' 'shopfloor culture' towards an increasing individualisation and greater conflict between auxiliary workers and operatives. In fact, in Allied, the layout of the machines and the piecework system was orchestrated and enforced by engineers and supervisors, whose authority was clearly recognisible and challengeable by the workers. In Morris, production is orchestrated by worker-entrepreneurs like Bob, or by supervisor-workers like Philip, whose authority is visible on the shopfloor and is constructed precisely through its informal culture. In other terms, in Morris, the distinction between auxiliary workers and operatives is blurred[176] so that 'skilled' workers come to control the technical system of the firm and to gain 'technical authority' in the eyes of the rest of the workforce. This incorporation of formal authority onto the shopfloor, dissolves, even more than in Burawoy's case, the conflict between workers and employers and transforms it into a conflict within the workforce. Nevertheless, in Morris, as I will show in the next section, this conflict fragments the workforce along the divide between hot and cold departments, rather than into atomised and individual strategies of making out, like in Allied.

Fun and work on the shopfloor

M. Burawoy (1985) claims that the piecework system is one of the mechanisms through which the workers take part in their own exploitation. In fact, according to the author, the workers organise the piecework system as a game that 'presents the necessity of

[176] The blurring of the distinction between auxiliary workers and operatives, and the empowerment of the operative workers with supervising and organisational responsibilities, is characteristic of flexible organisations and, paradoxically, makes Morris more modern than such bureaucratic organisations as Allied.

their condition as freedom' (ibid: 37). One of the reasons why the workers of industrial organisations 'play games of production', the author claims, is 'boredom'.

According to the industrial psychologist W. Baldamus (1961), 'games' are mechanisms of temporary relief from the experience of deprivation' (ibid: 52). 'Acclimatisation, adaptation, habituation..... all mean that the response to a given stimulus becomes progressively weaker if the stimulus is continuously and unvaryingly repeated' (ibid: 1). Besides, industrial organisations imply an 'employment contract consisting of an exchange of effort in return for wages'. This exchange is left open because the workers' efforts are not quantifiable in advance but are *directly* related to their subjective experience of deprivation and anxiety. That is to say, paradoxically, the more the workers are deprived – bored, tired, weary – the more they increase their efforts, their disposition to work and therefore, their productivity. In this context, it is in the interest of the management to disappear from the shopfloor precisely to allow the workers to react to the absence of a visible authority by agreeing on their own coefficient of effort – normally higher than what would be expected by the management – and on the rules of their informal games.

Burawoy (1985) uses Baldamus' findings to substantiate his claim that the workers' games on the shopfloor imply an agreement on the rules of the game and therefore legitimate the rules of capitalist relations of production. According to Burawoy there are two main games of production: piecework and the experience of 'traction'. Baldamus describes traction as 'a feeling of being pulled along by inertia inherent in a particular activity. The experience is a pleasant overall atmosphere of speed and pressure of production and functions as a relief from tedium. Traction seems to be closely related to rhythm' (ibid: 59). Thus, following M. Burawoy, the more the workers' production process is fragmented, the more they will rely on piecework games and on rhythm to overcome boredom. The more they become absorbed by the game of production, the quicker they will produce, thus losing even more control over the production process and therefore increasing their fragmentation.

In Morris this is the case in the cold department, where the workers accompany their fast movements with jokes, hugs and loud music from their radios. In fact, speed and pressure in the cold department are pleasantly contagious as tension and energy,

released from the individual bodies spread around the group of workers sharing the same space and physical movements. The 'contagiousness' of the production process, is clearly visible in Andy and Tony's co-ordinated movements at their grinding machines, located next to each other in front of the white wall of the cold department. Daily, Andy and Tony grind frantically following the same rhythm, challenging each other to work faster, or making fun of each other's pauses or mechanical breakdowns. For them, the pressure deriving from the movements, utterances and jokes of the other is itself a sort of 'game', to which they get used and that motivates them to work faster. When either of the two is absent, the production process slows down (even if the two grinding operations are not technically interdependent). The mood of the lone grinder is subdued, the reason being according to Alf that 'after all this time Tony and Andy have became like one single hand'. Inside the circular wall of the machines of the 'Chisel bits and boxes department', Steve, Rob and three other workers, move in strict proximity performing small and fragmented technical tasks tightly connected with each other. Their physical and technical interdependence in the production process is mirrored in and reinforced by their jokes, laughter and by the frantic rhythm of the music from their radio, located on Rob's locker. Whenever Steve is tired, Rob starts banging his hammer following the music, challenging Steve to follow him, thus recovering his concentration and productivity. Similarly, in order to co-ordinate their operations, Steve and Dave have to rotate their chests in a very unnatural way towards each other. With time, they have agreed to throw the finished bits on each other's machine avoiding the superfluous rotation of their bodies. Whenever a piece is thrown, laughs and jokes accompany the performance of the two contenders in this new 'game of production'. From the technical point of view the very fact that the production process of the cold workers is fragmented, makes their operations repetitive, tiring and ultimately boring. From the social point of view, it is precisely the reaction to their condition of boredom – that is, jokes, games, and their close interactions – that makes the cold workers even more productive.

According to Burawoy, workers agreeing on games of production unconsciously subscribe to their condition of exploitation. The unconscious nature of this agreement is substantiated by Baldamus' argument that individual efforts are mechanical responses to environmental conditions (rhythm, visual proximity, layout of the machines). I have suggested that this claim is partly true and that the only – curious – way of challenging the boredom deriving from a repetitive task is to work faster. Besides, I have also

suggested that this 'tense' level of work creates 'traction' that is, an involvement of the workers in their activities of production that entails both lack of control and of consciousness of the tasks of production. In turn, this lack of consciousness and control over the tasks of production intensifies the subjective perception of fragmentation of the process of production, recreating the condition of boredom and therefore of further increases of productive efforts. I have also shown that the cold workers have a curious way of describing their production process as a process of 'making money' and of blurring the distinction between 'making money' and 'having fun'.

Nevertheless, I suggest that the cold workers' obsession with piecework ratios and weekly bonus is not an unconscious consequence of their alienation in the production process, but rather a conscious strategy of adaptation to it. In fact, my understanding of the motivations of the cold workers – not considered by Baldamus – is that they use the idiom of the market as a social glue to re-compose their fragmented group. One day, Rob explained to me in simple words Baldamus and Burawoy's ideas about the relations between 'money', 'fun' and 'fragmentation' on the shopfloor.

'In our job you have to have a laugh...I know we look silly sometimes, but our job is so boring that the only way to resist is to have a laugh together... laughing is also a way of watching each other's back, of protecting each other. In fact, jokes are our second language, a way of escaping the control of John and of the other workers (the hot ones). For instance we use nicknames because they are funny, but also because the other workers and the staff don't know who they refer to.... rather than saying that Bill did so and so, we say Andy did so and so...Or instead of letting everybody know that Tony scrapped a bit, we bang our hammer rhythmically together, so that Alf can realise what's going on and tick off the scrapped bit from his record book. It is fun, but we don't do it only for fun. Jokes also make us work faster because we understand each other quicker, and we don't need to waste time by calling everything with their real names... we don't have much personal ambitions in this job, we work only for money and for fun, for this reason we don't want any responsibility or power or personal involvement.., these are things that mess up your mind...we are a good group of workers and earn good money because we have fun together.. each bit that goes into the warehouse is the product of our collective job and comes from the hands of the workers of the cold department. In fact, we are responsible for the value of the finished products and not the hot workers....they don't care if they turn out scrap because they are dealing with rough bits of steel. If some of the guys (cold worker) scraps, a lot of money gets wasted because the bit at our end of the shopfloor is already very valuable....they are valuable because they are almost finished products, almost inside Graham's bloody warehouse. Our machines are very old and we do a great job for the kind of old machines that we have got.. I don't care if the owner makes extra profits with CISCO, I only care that this place remains open. Greid (the owner) is an ex-worker like us who got a little bit of redundancy money and with the skills that he has learnt in the big places, like us, has opened his own place. In the past, Sheffield was very famous for its big steelworks and for their organised workforce, but now times are changed, the pot is empty and the workers have to be happy that small places like Morris still exist. I am still fascinated by the big steelworks.. big steelworks are serious businesses, they are not like Morris (he laughs). I still remember the dirty and dangerous job that my father used to do as a crane driver. It was a dirty job but a serious job, not like here....When I get home, I leave my problems at work, I switch off.. I don't understand people like Bob who takes it too seriously....you have to

have a laugh, how can you seriously believe in your job in this old shopfloor... we are all Victorian workers, bloody monkeys. That's why an anthropologist like you is so interested in us.. '
(laughs).

Looked at from the perspective of the cold workers, games and irony reinforce the informal group of workers, increase their control over the process of production and give social meaning to their fragmented technical interactions on the shopfloor. Thus, 'irony' is a 'second language' that allows the cold workers to give different meanings to their daily experiences of work. Irony decouples language and reality and permits a reconciliation between Rob's fascination for the big steelworks and the small obsolete machine he uses at Morris, the dust and noises of the shopfloor and the workers' strange attachment to it, the owner's hidden profits and their poverty. Games of production are part of the irony that the workers display towards their job, and not an ironical consequence of their alienation. They allow workers 'to hide the play of the social relations behind the impersonal veil of 'money' (P. Bourdieu, 1972). Like Bernard's policeman's hat, jokes ridicule, humanise and reproduce authority but also, like the coloured ice creams exchanged by the cold workers at the end of the summer working days, they create solidarity. Similarly, market exchanges – of objects with almost no value (Alf's fishing equipment, Tony's drawings of football stars, Steve's photos of ancient steelworkers and Mick's tapes) against small sums of money – create dense concentrations of cold workers near their lockers during working time, new topics of conversation and ground for building alliances during the break-time. Thus, the language of the market and the illusion of market relations of the machine shop workers of Morris, foster collective action rather than individualism, and the piecework system provides a ground for temporary re-aggregation, rather than increasing fragmentation, as for the machine shop workers of Allied. These temporary aggregations also form in the pubs of the city centre on Friday nights, where the cold workers often meet to talk about 'fun and work' with the same irony and lightness that they display inside the firm.

The interactions in the hot department are regulated by a display of respect and of reciprocal distance. In fact, the workers' private knowledge of the production process, their direct control of their machines and tools of production and their personal sense of self-gratification for their job make irony and sociability superfluous. Besides, they openly despise the 'market' mentality of the cold workers and the greediness that motivates their work. In fact, they replace exchanges of goods with exchanges of highly

symbolical gifts: pens, tools, engineering manuals that usually converge towards the eldest workers of the department. Cut out from the dynamics of the market and from the pressures of the piecework system, they claim to be working for 'their selves'. The hot part of the shopfloor produces with harmony and regularity, each worker driven by a solitary motivation that – in the words of Tony – 'comes from within'. Like the workers of the small Japanese firms described by W. Ouchi (1980) and R. Eccles (1981), the workers of the hot department co-ordinate their production through the silent authority of tradition and through the sharing of the same knowledge, crafts and sense of history rooted in the neighbourhood surrounding Morris.

Bob's comments around the rococo' table well describe the hot workers' ethos of work:

> *In our department we don't work for money but for personal satisfaction. Cold workers are greedy and they work only for money. I like my job because I am interested in it and I get personally involved in it, whereas the others (cold workers) don't work for 'their selves', but only for money.....I can't forget my problems at work, and if a machine breaks down I spend my time at home thinking how to mend it...This is the reason why I like the small steelworks like Morris, because problems can always be solved if you have the mechanical aptitude. Sheffield has a strong tradition of cutlery industry and Morris is part of this tradition, in fact it was in the old workshop of Mr. Morris that the Bowie knife (a renowned hunting knife that was sold around the globe) was invented ...in the hot department we use the same machines of that old workshop and our job is not changed since the middle ages: it requires precision of hands and sharpness of the eyes...the only thing that is changed since the middle ages is people's greediness: they don't work for satisfaction anymore, they only want money, a nice car and a nice house. In Attercliffe there are plenty of small firms like us, of little mesters... this place will never close down because there are several firms that depend on our job. If this place closes down, the whole neighbourhood will disappear'.*

Thus, the bonus system provides the workers with two solid and coherent narratives. In the hot department the technology of production of the forger is culturally framed in a specific pre-capitalist ethos of work, protected by the status of the elderly workers, embedded in implicit, hierarchic and bodily[177] forms of knowledge and spaces of action. In the cold department the workers represent their interdependent, fragmented and flexible process of production in terms of labour whose value takes shape in codified, public, numerical and monetary forms and is shared by the same homogeneous 'class' of workers. On the shopfloor, these narratives create solid boundaries between the cold and the hot workers, between the 'market' and 'money' that motivate the former and the

[177] Bloch (1989, 38) interestingly claims that 'messages carried by the language of the body become ossified, predictable and repeated.. the acceptance of this code implies compulsion'. According to Bloch, bodily communication requires a greater exercise of authority than less formalised kinds of linguistic communications.

'hierarchy' and 'tradition' that inspire the latter. Nevertheless, as I will point out later, the very existence of these boundaries makes the transitions between the two spaces possible.

Discussion about value in the break-room

At 10.30 the workers have a half a hour break. During the break, the hot workers regroup according the hierarchical criteria of 'skill', whereas the cold workers gather together in the break-room, a small empty room with ten tables where the workers sit in pairs. Only a big clock adorns the empty walls of the room. The less skilled hot workers join the cold workers in the break-room, exchanging newspapers, fishing tools and gossip with them but also publicly negotiate their different narratives of work in the form of superficial conversation, innocuous jokes, or extemporaneous comment. The anonymity of the white room together with the peculiar small squared coffee tables scattered in it, emphasise the public nature of the workers' informal interactions and almost transfix them into staged dialogues. Measured statements, calculated irony and desultory conversations show the fragile quality of the trust and fun that the workers display near their machines. In the empty room, echoed utterances seem to mirror the workers' strange encounter on the shopfloor whose old machines are framed by the long window of the break-room.

One day, Alf made a bitter remark to me about Bob's habit of keeping his tools locked. According to Alf, Bob is very selfish and self-centered when he works and he is extremely possessive both of his tools and his machines. This remark was echoed by Steve who, interrupting his reading of the 'Sun' behind us, claimed that 'they (the hot workers) are selfish because in their job they trust only their machines, whereas we (the cold workers) need each other to do our job'. Tony joined the conversation adding that cold workers are a 'group of friends, whereas the hot workers are prima donnas'. This sentence reminded me of one of the early days I spent in the cold department when Tony wrote my name in white varnish on a rough bit and each of the cold workers taught me to perform their tasks working on this same bit. As the bit was being processed, Tony explained that it acquired value precisely because it gathered 'the labour of so many different hands' (in the words of the economists, because it contained a considerable amount of 'added value') and because – he explained to me jokingly – by

processing that bit the cold department was incorporating me into their group. Thus, the disappearance of my name under the shiny surface of the polished bit, symbolised the process of creation of value in the cold department, where the individual qualities of the workers are constantly absorbed and dissolved into the final product that becomes a sort of material equivalent of the value of their collective labour. Unlike the value of the bits in the hot department, which according to Tony 'is scrap' because they contain a very small amount of human labour, in the cold department the bits incorporate the labour of a collectivity of workers and this gives to them a considerably higher value.

During the conversation, Tony and Teddy showed their strong disagreement on the role of the hot and cold department in shaping the value of the final products. In fact, according to Tony, the final value of the product was 'in the number of hands that go into it' (thus, quantitatively related to the amount of labour incorporated into it), whereas according to Teddy, its value depended 'on the shape of the bit' (that is to say, on the qualitative change of the shape and properties of the steel to be attributed to the forgers in the early phases of the production process). Because their technical system transforms individual efforts into collective measures of value, Tony claimed that the cold workers were more altruistic and egalitarian with each other than the hot workers and that the high bonuses that they produced for the whole workforce were the proof both of their cohesion and of their altruism. Teddy reacted to the accusations of the cold workers with mannered pride and objected that the cold workers are 'greedy' and more interested in money than in their job. On the contrary, Teddy claimed, hot workers perform the most wearing tasks and bring their whole body and personality into the production process. How would they explain otherwise, asked Teddy, the fact that hot workers suffer from back pain and heart and blood pressure diseases much more than the cold workers? Isn't it proof that they devote all their individual strength, passion and efforts to the job?

The conversation developed following the usual opposition between the cold workers' perception of value as determined by collective labour and the hot workers' perception of value as the outcome of individual effort. During the conversation, Tony and Steve translated matters of economic value into a discussion about friendship and equality, whereas Teddy explained 'economic value' in terms of individual status and job commitment. Staged inside the break-room, this opposition recreated the usual

equilibrium in 'Morris' between the long-term worries of the hot workers for the firms' assets (what economists call 'fixed capital') and the cold workers' short-term involvement in the monetary bonuses (in the words of the economists, 'variable capital'). Enclosed inside the white and artificial atmosphere of the break-room, the more fundamental contrast between labour and capital was turned into a routinely staged antipathy between different generations of workers, whose labour crystallised into capital with different degrees of mobility.

Everyday Bob and Tony, the two elder and most knowledgeable workers of the hot department, take an old rococo' table from a pile of scrap machines located near the big blue entrance door, and put it right on its threshold. On the table is written ' Bob & Tony's diner'. Everyday Bob and Tony sit around the marble rococo' table feeding pigeons and surveying the events taking place around them: the young girls going to work at the brothel a few metres from the blue door, the bridge on which the trains transport steel to the South, the tramp with his old dog trying to steal the bread from the pigeons, the workers from the chicken slaughterhouse having their break on the other side of the street. 'Have you seen how Steve hammered his machine today?' Bob asks Tony. 'Terrible' answers Tony, 'they will never learn'. During their breaks around the rococo' table, Bob and Tony often complain about the careless use of the machines by the cold workers and plan new methods of work and new investments in more efficient machines. Intimate and contemplative, their breaks around the rococo' table reveal their constant worries about the bad management of the firm, the changing nature of work and the constant deterioration of their old machines on the shopfloor.

The changing qualities of the value of labour

In the previous section I have shown that the cold workers value their contribution in the production process by looking at the numbers of times the product is processed by different operators, while the hot workers look at the qualitative transformation of the raw steel into a definite shape that is made possible by the forging machine. In this section, I show that the workers' narratives regarding the value of their labour is influenced by factors, which are external to the working context.

(A) Value as Money

I have already suggested that the cold workers perceive 'money' as an instant numerical equivalent of the value of their labour, whereas the hot workers recognise the value of their job in the long-term stability of the firm. This difference in the orientation – to the future of the hot workers, and to the present of the cold ones – seems to contrast with their personal financial situations. In fact, the cold workers pool their yearly income of £13,000 with the income of their wives that is at least equivalent to it, whereas the hot workers – with the exception of Tony – are the only breadwinners of households often containing several unemployed members of the extended family. Thus, the wealth differential between the two categories of workers would logically lead us to conclude that Morris's wages are more valuable for the hot workers than for the cold ones. If this is the case, why do the hot workers seem to value the firms' bonuses less and the firm' s long-term survival more?

As I will show in more detail in the chapter on the informal economy of Attercliffe, the hot workers are involved in several productive exchanges with firms located in the neighbourhood that run parallel to the main production process. Thus, while the cold department is involved in the ordinary production of the bits produced in Morris, Brian, Tony, Bob and Teddy produce independently for several firms during the working time and act as middlemen between local tool firms. Thus, when production slows down in Morris, the hot workers are able to intensify it through their personal connections and to counterbalance the decrease in the company's wages with the increase of income connected with their informal production. For this reason, the weekly wages of the hot workers are embedded in a web of other monetary transactions so that they are more concerned to diversify their incomes by producing and exchanging in the neighbourhood than to maximise the income deriving from the bonus system and connected to the main production process. Besides, the heterogeneous forms of incomes that flow together into their households – disability benefits, housing benefits, income deriving from interior decorating, building, car repairing, trade in second-hand tires or 'swap-shop'[178] bargains – are rooted in the informal economy of the neighbourhood.

[178]Swap-shops are 'trading places' where stolen furniture, electrical equipments, magazines, tapes and clothes are exchanged. Unlike the licensed shops, swap shops are illegal and generally kept opened for brief periods of time.

From this point of view, the productive transactions that the hot workers have with local firms are also ways of creating social connections on which these other forms of income – and the survival of their household – ultimately depend.

Thus if the hot workers consider the wages of Morris as an insurance (or investment) for the future, the cold workers consider them in term of cash flow with which to face the current costs of life given that their wages – added to their wives' wages – are the only form of income for the reproduction of the household. In Morris, different workers give to 'money' and to the company wages different economic values, according to their degree of isolation from the social and economic texture of the neighbourhood. The cold workers are pure wage earners and their strategy is to maximise their income by intensifying and concentrating production. The hot workers are not only wage earners but also petty entrepreneurs whose strategy is to maximise their returns by diversifying their production and exchanges outside the firm.

(B) Value as Places

The cold workers live at least 20 miles from Attercliffe and therefore, with the exception of Andy, they all drive to work from distant places. For the cold workers, 'home' and 'work' pertain to two sharply distinct spaces and their long daily car journeys between these two spaces sharpen the contrast between their private and their working domains. For the hot workers – who live mainly in walking distance from Morris, or a few bus stops from it – the two domains of 'home' and 'work' are often blurred. In fact, because of the proximity of Tony's home to the shopfloor, often Carl and Evan (Tony's son and grandchild) often visit Tony on the shopfloor, drinking tea near his twister whilst the rest of the shopfloor is immersed in its normal rhythm of work. Similarly Freda often pops in to bring to Teddy the sandwiches when he forgets them at home and Steve drops his shopping bag home during the working hours.

As I have already shown, the 'domesticity' of the shopfloor and its location by the houses and firms controlled by the Cliff lads gives remarkable economic advantages to the hot workers. In fact, because of its centrality in Attercliffe, Morris participates in the 'domestic' and 'informal economy' that unfolds around it during the working hours. For instance, every Monday morning Teddy collects from Khaled's a few bottles of gin and

packets of cigarettes that he sells to his working mates with good profit margins. Old Bettie, a friend of Tony, pops into Morris to sell calendars, watches and second-hand tires that her lodgers have somehow collected; Bob fixes the machine that processes chicken carcasses at the slaughterhouse opposite Morris in exchange for free-range chickens and the owner stops for a free lunch at Teddy's cousin's pub – 'The Traveller' – in Attercliffe Road, in exchange for which he 'forgets' Teddy's recurrent absences on Mondays.

Nevertheless, the physical and economic interdependence between 'home' and 'work' can increase the 'visibiliy' of the hot workers' private lives and therefore their vulnerability *vis-à-vis* the owner and the rest of the workforce. In fact, Morris being so close, John (the manager) often pops into Steve's home when he is not at work, or looks for big Dave in the streets of Attercliffe on Mondays in case he is still sleeping near some pub. Besides, given that Teddy's daughter is on the dole, why was she seen by the workers walking out from 'Teddy's bakery' wearing a white baker's uniform? And why do Freda and Mr. Greid spend so much time together at the 'Traveller'. Is it true that they are having an affair?

As I will show later, this mix of private and public and of domestic and economic spaces in Attercliffe, creates a constant exposure of the Cliff lads to the public gaze of the neighbourhood where private morality and public accountability are continuously re- assessed through gossip, drinks and informal deals in homes, firms, pubs and brothels. As a consequence, the social encounters in Attercliffe are driven by moderation, self-control and detachment, and friendships are strange mixtures of trust and self-protection and of intimacy and utilitarianism. Unlike them, the cold workers often meet 'outside work' for a pint on the Friday night in London Road, around the city centre, their friendship relying on their common experience of work and perception of leisure times and spaces in opposition to the spaces and times of production.

Thus, the value of labour in Morris changes according to the different ways in which the economic, physical and social spaces of 'home' and 'work' are experienced by the workers. For the hot workers – whose households and shopfloor are physically, economically and socially interdependent – the value of the labour inside the firm is complementary to the variety of transactions and personal interactions taking place

outside it. For the cold workers the value of labour is embedded in the shopfloor and physically and mentally experienced in sharp opposition to the private realm of the 'home' and their friendly encounters in the pubs of the city centre.

(C) Value as Memory

Most of the hot workers come from families of skilled steelworkers. Young teenagers during the 1950s, Teddy, Brian, and Steve left school without formal qualifications to learn steel labour on the shopfloor as apprentices of some friend of their parents to whom they had been recommended. I have already noted that, for the forgers, memory doesn't emerge as a conscious and punctuated mental effort, but rather as a continuous and implicit process of retrieval of the knowledge that is necessary for them to perform specific tasks. This constant need to remember in order to work is described by Teddy as a pleasant feeling. In fact, in recalling his past and the past of his family of steelworkers in Attercliffe he goes back to a time when he was better off and when the Ryder hammer fascinated people for its splendid mechanisms. This past seems to reassure Teddy and to provide him with some insights into the present so that he claims that his hands near the Ryder hammer are 'the roots to my past'. The memory of the past intrudes into the hot part of the shopfloor and is embodied in timeless objects: old calendars and milk bottles, brooms without bristles, wooden handles, chairs and boxes eroded by time. These three kinds of memory: the embodied memory; the conscious recollection of the past; and the objectified memory, provide a constant link between the hot workers' present and their past and legitimises exploitative social relations[179], such as the apprenticeship system, and ancient working practices, such as subcontracting production to outside workers.

The cold workers come mostly from families of unskilled or unemployed labourers and steelworkers. Because of their younger age, they have witnessed only the decline of the steel industry and the bitterness and disillusionment of their unemployed fathers. Thus, if they have any memory of steel, they prefer to forget it. They got the job in Morris through formal qualifications and job interviews, rather than through personal training and they perform tasks that are codified and transmitted through external mnemonic

[179] As Bloch (1989) has elegantly demonstrated, tradition increases its compulsive power when crystallised into bodily movements.

supports: papers, chalk inscriptions and jokes. These tasks are interconnected, standardised, quick and repetitive. Thus, memory seems to play a major role in the different ways in which 'work' is experienced in the hot and in the cold department. In fact, in the former, people produce by remembering, whereas in the latter, people produce by forgetting.

(D) Value as Bodies

Teddy uses his body to direct the weight of the hammer with precision on the object to be shaped. Each stroke of the hammer is followed by a muscular contraction so that Teddy's muscles and posture have slowly adapted to the machine and almost become a cast of it. According to Teddy's wife, the fact that Teddy looks 'like a crab with long arms, big hands and chest' is to be attributed precisely to his motor activity at the forge. Apart from this peculiar aesthetic, the forgers develop chronic back pain and muscular problems that make them totally unfit for the more flexible and mobile work in the cold department. Thus, the bodies of the hot workers are idiosyncratic to their machine, so that they cannot be transferred to other machines of the shopfloor or to other shopfloors. As such, the life of the machine and the life of the forger are closely interwoven so that the efficiency and obsolescence of the former are reflected in the strength and pains of the latter. The elder workers of the hot department have bigger and more solid bodies than the cold workers whose small bodies are interchangeable on different machines and adaptable to different shopfloors.

Hot workers challenge *back pain* in two ways. Tony keeps his body fit by walking in the Loxley valley and going to the gym three days a week, whereas Teddy, Brian and big Dave forget about pain by getting drunk almost every night. Besides, hot workers have different attitudes towards *cleanliness*. For instance, Tony washes his body and clothes every day when back from work, whereas Teddy and Brian have a shower in the morning and keep their working clothes in their lockers for at least one week before washing them.

I have already suggested that machines acquire an almost human essence in the hot department. I now suggest that this essence is *gendered* and that the forger's idea of male behaviour is reflected in the massive, strong, regular and solid shapes of the Ryder

hammers and in the slow and heavy pace of their movements. In fact, Tony's idea of male qualities – 'discipline', ' reliability', 'faithfulness' and ' stability' – almost reproduce what he considers to be essential qualities of good machines. Similarly, the workers use the same terms when they talk about male productivity and male sexuality. For instance, 'hammering' and 'turning out' are terms used both for sexual intercourse and for production; 'twists', 'reds' and 'hammers' are used to denote both the male sexual organs and the forger's objects of production; and by ' keeping it steady' and 'not rushing out' the forgers refer to their skilful adaptation of their physical energy to the quantity of efforts required by their – sexual or productive – task.

The bodies of the cold workers are densely connected in small productive spaces, lightly suspended near each machine, and flexibly interchangeable on the shopfloor. As such, they don't deteriorate from the physical interaction with their machine, but from the social pressure coming from the shopfloor. In fact, mostly suffering from vertigo, dizziness, ear infection, white finger, nervous breakdowns, their senses seem to translate the disordered energy of the grinding machines into the tight social pressure of the bonus system. Cold workers perceive the physical deterioration of their bodies and their ageing with irony. For instance, when Steve and Rob meet to play soccer they often end up talking and smoking near the goalpost when the rest of the players are running after the ball somewhere else. Similarly, Tony claims to be preparing himself for the London marathon by jogging from his house to the Robin Hood pub twice a week. Besides, they don't display their bodies on the shopfloor and keep them wrapped under blue overalls and protected from cold and drafts. Because of this, differences in height, muscular structure, and fashion are imperceptible on the cold shopfloor, so that even Andy's fragile body seems to be of the same size and structure as the others.

In the cold department, sexuality is represented differently than in the hot department and it almost reflects the difference in the morphological qualities of the machines and in the technical interactions of the workers. In fact, here the qualities of good grinders – their 'soft' touch, nimble fingers and their versatile and flexible bodies – are often used by the younger workers to speak about their 'more feminine' sexuality. In fact, requiring less strength and more 'softness' of touch, the skills of the grinders are often described by the workers as 'feminine' skills and both Andy, whose soft grinding is essential to straighten the bits that are hammered by Alf, and Roger, who polishes the

rough bits with light touches, display an exaggerated feminine behaviour on the shopfloor. One day, Roger arrived on the shopfloor drunk, dressed like a woman. The workers knew that Mr. Greid was away on a business trip and so they encouraged Roger to perform his 'Drag Queen dance' on the roof of the break-room, accessible from the shopfloor by a steep stairs. Following the sound of Rob's music, Brian led Roger into a passionate waltz, touching him all over, followed by Teddy who grabbed Tony and by big Dave who lifted Andy from the ground in order to start the dance. On this occasion, I realised that cold workers were behaving like women and the hot workers, like their men. Thus, in spite of the fact that both the hot workers and the cold workers go to the Sauna and Brothel next door to Morris almost every week, on the shopfloor they display their sexuality in opposition to each other. Maleness – circumscribed within the shopfloor boundaries – seems to break down into two oppositional genders thus becoming 'feminine' in the cold department and 'masculine' in the hot department.

In this section, I have shown that the workers value their labour according to a variety of subjective (memory, knowledge, symbolic properties of the body) and objective (residence, household income, age) factors. The evidence of this section suggests that Burawoy's claim that the workers' consciousness is crafted at the point of production, is true of the cold workers, but not of the hot ones. In the next section, I will frame the workers' different notions of 'labour value' in terms of Carrier's essay on 'alienation' in modern factory production.

Alienation in relations of production

James Carrier (1993) uses Marx's view of alienation as a perception of 'separation of objects as well as other persons from the self' in his historical sketch of the emerging alienation in modern factory production. More specifically, Carrier combines Marx's notion of 'alienation' with Mauss' model of exchange to analyse the way people produce in industrial society and concludes that 'the growing alienation in production is part of a broader differentiation of life into 'more 'purely' economic and more 'purely' social aspects' (ibid: 541). Following Parry (1986), he also claims that 'alienation refers to how people perceive and understand themselves and their environs' but nevertheless suggests that 'it (alienation) has correlates more social and material' (ibid: 540). Among the various historical forms of production described by Carrier, here I will consider only

'early factory production' and 'modern factory production'. The reason why I consider only these two forms of production is that they closely resemble the way production is organised and experienced respectively in the hot and cold departments in Morris. My intention is to find out whether these two forms of production entail different degrees of 'alienation' of workers and, if this is the case, whether emerging alienation is really perceived in terms of increasing separation of the self from the objects, men and environment involved in the process of production.

According to Carrier, early factory production appeared in the cotton-spinning factories towards the end of the eighteenth century and 'emerged because it allowed the capitalist a greater supervision and greater control over the quality and pace of production' (ibid: 544). Early factories incorporated household production onto the shopfloor, therefore creating a mixture of commodity relationship – between capitalist and contractor – and of familial relationship between contractor and assistant. Besides, the fact of moving production to a central place fragmented the process of production for three reasons. First, because the workers lost the control over their tools and equipment. Second, because they lost control over the rhythm of production, in that the 'power source lay in steam, not in their own muscles' (ibid: 545). With regard to this second point, Carrier agrees with Thompson (1967:60) that the centralisation of production modified the workers' perception of time and was ultimately responsible for the workers' perception of their production more in terms of sale of labour power than as a performance of specific tasks. Finally, the abolition of formal apprenticeship fragmented the working community – their working knowledge, rituals and obligations – into a loose aggregate of workers who negotiated the sale of their labour power individually with the owner.

Modern factory production increased the alienation of the workers from the production process. Firstly, because 'it eliminated the older familial and community relations between workers and their assistants so that workers were less likely to experience themselves as a part of a durable web of relations ... and more likely to experience themselves and their co-workers as independent entities. Increasingly workers were alienated from production and its products' (ibid: 547). Secondly, and more importantly, alienation increased due to the increased mechanisation of the process production. In fact, following Braverman (1974), modern production incorporated both tools and labour power into the machine and 'by breaking down production into more and simpler

steps decreased workers' control over it and decreased the likelihood that people would be linked in durable ways to their co-workers' (ibid: 548). The proof of the emerging alienation of modern factories is that workers don't meet outside the workplace and that friendship remains confined to the shopfloor. Carrier concludes that modern production entails:

'a new understanding of persons and of their work, one that sees persons as having two distinct aspects, a core and a periphery. The core is made of things that people believe to be internal to the individual or continuous with the individual as concrete being. This inalienable self is engaged in durable, inalienable identities and relationships... The periphery, on the other hand, is made up of a set of less durable attributes and of relations among individuals entering into agreements to do certain things in accordance with certain standards or rules. In the context of these relations people experience each other not relationally, but autonomously, as independent individuals' (ibid: 552).

In my ethnography, the hot department closely reflects the early factory production described by Carrier in his article. In fact, its workers control the process of production in several ways. First, they own their tools (like Bob, Tony or Dave) or use their hands like tools (like Teddy and Brian) and therefore actively control the machines, rather than being controlled by them. Secondly, they organise their time 'by task' and not in terms of undifferentiated working days. Thirdly, they control the transfer of knowledge of work through apprenticeship and personal induction, thus resisting the effect of deskilling associated with modern machines. Finally, they mix intimate social relations with working relations either by visiting home or being visited by relatives during working time or by exchanging services and objects between the shopfloor and the many economic subjects located in the familiar realm of the neighbourhood.

On the other hand, the cold department easily fits into Carrier's sketch of modern production. In fact, its workers don't use their tools or hands to perform their tasks and depend totally on the movement of the machine to produce. Secondly, they experience the working day in terms of a continuous set of repetitive movements that they don't connect to specific tasks so that they talk about their working day in terms of 'time spent' rather than in terms of ' jobs done'. Thirdly, they learn and reproduce their job through formalised and public interactions and speak of it in terms of weight, inches, speed and bonuses. The fact of talking of work through standards allows them to separate their subjective experience of work from the process of production. This conscious separation that the workers put between producing and thinking is described

by Tony as 'not getting personally involved in what we do'. Finally, the cold workers consider the economic and social spaces of 'home' as totally separated from the economic and social spaces of 'work', the former being the realm of consumption, intimacy and inactivity, and the latter being the realm of production, money and continuous and wearing work.

Further, Carrier's definition of alienation as a progressive split in the workers' personality also fits with the way cold workers create a separation between their personality at work and their personality outside work, and value their labour in opposition to their subjective and intimate being. In contrast the hot workers link their private lives to their lives on the shopfloor and value their labour as indissolubly linked to their intimate personality. Nevertheless, some inconsistencies in the clear-cut picture that I have derived from Carrier call for further explanations. For instance, why have the cold workers developed solidarity in the factory, and friendship outside it, in spite of their greater fragmentation on the shopfloor? And why do the hot workers ignore each other on the shopfloor, and avoid each other outside it, in spite of their greater control over the labour process and of the fact that they live in the same neighbourhood? Besides, why do the cold workers agree to produce bonuses for the hot ones and close an eye to the hot workers' private businesses? And what happens when the cold workers move into the hot department? Do they become less alienated simply because their tasks and social interactions change? In order to answer these questions, it is necessary to stress that the workers' fragmentation – between the hot and the cold departments – and their different degrees of alienation, are not only the result of the technical system, wage structure and formal organisation of labour that are crafted by Mr. Greid in order to maximise his profits; they are also the result of the workers' own negotiations, and of their attempt to reconcile the different strategies with which they face their common condition of deprivation. Thus, in order to understand the dynamics underpinning the shopfloor culture of Morris, it is now necessary to frame it in the broader politico-economic context.

Spaces of poverty

The division of the workforce into hot and cold workers on the Morris shopfloor, can be seen as a re-enactment of the historical dialectic between 'artisans' and 'proletarians'.

In fact, the hot workers, like the artisans of the past, complement industrial production with a variety of informal transactions in the neighbourhood. Bob, Teddy, and Tony, of the hot department, are not only workers, but also entrepreneurs; they don't work only to maximise the wage, but also to build long-term social relationships with local subcontractors and customers; their wages are only a small part of the heterogeneous income that is pulled together in their extended families, and their formal production, as I will show later, is complemented with informal transactions of spirits, drugs and stolen goods; with seasonal building activities; and services repaid in kind. Thus, the hot workers are not entirely proletarianised, that is, they only partially rely on the sale of their labour to Mr. Greid to survive. They can be petty entrepreneurs at the same time – extracting surplus labour from some young apprentice – middlemen, and traders. Like the artisans of the past, they only partially depend on the formal labour market, and their economic capital is tightly linked to their social capital[180].

I have already stressed that the cold workers come from families of unskilled labourers who moved from Attercliffe in the 1960s due to the higher incomes that they received in the steel industry. The cold workers, mainly sons of these proletarians made redundant in the 1970s and 1980s, now return to Attercliffe as 'outsiders' commuting between their distant homes and the shopfloor. The distance between Attercliffe and the ex-mining communities where they live resulted in a loss in terms of their 'social capital' but a gain in terms of their 'economic capital'. In fact, the wives of the cold workers are employed in the several call centres that developed locally in order to replace the declined mining and steel industries. Able to pool their incomes with those of their wives, the cold workers bought spacious houses recently built on ex-mining land whose estate market rapidly developed. Because of their economic independence gained outside Attercliffe, they enjoy a more affluent lifestyle – cars, education for their sons, home furniture – than that of the Attercliffe inhabitants. Nevertheless, due to their social status of 'outsiders', both in the newly built estates where they live and in Attercliffe, they lack the social safety net enjoyed by the hot workers. Thus, like the proletarians of the past, they survive entirely on the sale of their labour to the capitalists and, due to their lack of social connections, their redundancies have disruptive effects on their lives.

[180] Here, I define 'social capital' as 'social networks' – based on kinship or friendship – and community associations. Later, I will position my work in the vast literature on social capital.

Thus, both categories of Morris workers rely on precarious strategies of survival. In fact, the social capital of Attercliffe is embedded in its ageing social network, in derelict estates and in a shrinking informal labour market, whereas the wealth of the cold workers is linked to the unstable employment of the service economy and to the volatile estate and labour markets associated with it. Besides, these two kinds of strategies seem to be closely related to each other, each of them being functional for the reproduction of the other. In fact, since the distant past, Attercliffe is a 'space of poverty' where the unemployed re-use their skills, derelict machines re-acquire their ancient movements, boarded up buildings again perform their old social functions and forgotten economic spaces re-emerge as profitable businesses. The very existence of Attercliffe is made possible by the continuous flow of economic resources (young unemployed workers, old machines, new capital) into its permeable borders from the 'economic spaces' outside it. Similarly, the economic spaces located outside Attercliffe – the big steelworks, the new estates and roads, the shopping centres and call centres – rely on the Attercliffe contractors, on its skilled fitters, blacksmiths and cutters and on the availability of its marginal workforce. In Attercliffe, the younger primary labour force finds new jobs in the marginal labour market, and the older marginal labour force is contracted in the primary labour market of the progressively privatised steel industry.

Thus, the strategies with which the hot and the cold workers deal with their poverty are, in the words of Bourdieu, 'structural variants of the same social formation' (1972: 175) whose complementarity becomes evident when the changing nature of the world outside the shopfloor is considered. In fact, because of the decline of the engineering industry, several engineering firms surrounding Morris are being closed. The workers made redundant from these firms are therefore expelled from the 'primary' labour market, ready to enter into the so-called marginal labour market now occupied by Morris's machine shop workers. In times of recession, this gives Mr. Greid the possibility of recruiting better qualified machine shop workers at the same cost as the Morris ones, as the recruitment of young Jim demonstrates. This trend is likely to continue and a long conversation with John made me realise that a conspicuous flow of younger and better-qualified cold workers is expected. As the hot workers retire, the cold workers will be therefore pushed into the hot department, as happened to Brian (who started at Bernard's milling machine before old Joe retired), to 'old Joe' and to Teddy. The future

of the cold workers seems to be uncertain outside the shopfloor too. In fact, the short-term nature of their wives' jobs, the negative equities of their homes and the high costs of commuting between Sheffield and their homes are pushing some of them – like Roger – back to Attercliffe and close to the poverty line.

In conclusion, the fragmentation between the hot and the cold workers does not only mirror the technological and organisational features of the shopfloor, but also the workers' age differential and their different structural socio-economic background. It is not only enforced by the capitalist to extract profits, but also constructed by the workers to survive poverty. In fact, the workers *construct* their technical and social fragmentation on the shopfloor, precisely to accommodate their different socio-economic needs. In my ethnography, I suggest that the older hot workers react to poverty through personalistic strategies and through narratives that re-evoke the myth of the archaic world of the medieval blacksmiths and grinders, whereas the younger cold workers use impersonal strategies and working class narratives rooted in the modern world of the steel industry. These narratives imply two different attitudes towards money and towards the play of 'interest' and 'passion' (A. Hirschman, 1977) in the workers' lives. Yet the fragility of the boundary between the morality and skills of the two categories of workers is evident in the fact that the workers often cross these boundaries. Whilst the hot workers despise the 'greediness' of the cold workers, and their constant search for higher bonuses, they are nevertheless constantly thinking at making new profits, and involved in continuous marketing activities for themselves and for the owner. In a similar way, the cold workers' claim that they work only for money contrasts with their close friendship, and with the fact that they don't oppose the firm's wage policy of collective bonuses, and therefore end up producing extra income for the hot workers. Finally, the gulf that, according to the workers, separates the skills of the forgers from the skills of the millers, conflicts with the fact that the cold workers are often also apprentices of the forgers, and migrate into the hot department, as soon as a job becomes available.

Conclusion

The first conclusion that can be drawn from the material presented is that capitalist production doesn't necessarily involve the externalisation of the workers' knowledge

into the machines, as Henry Braverman's reading of the development of capitalism suggests. Rather, in Morris production is externalised in the cold department but not in the hot one, where technology is more a Maussian 'technique of the body' than a Marxian 'technology of production'. I have also shown that the cold workers' technologies of production require different, not 'less', skills than the hot workers' techniques of production. More importantly, against Braverman, I have shown that the skills are not only imposed on the workers by the technical system or managerial apparatus of the factory, but also constructed by the workers themselves, in order to shape their social relations in production. The lack of formal authority on the shopfloor, and the fact that the layout of the machines and the piecework ratio are established by Bob, supports this claim.

The second conclusion is that Burawoy's and E. P. Thompson's claim – that capitalist factory regimes involve the intensification of production through the wage structure and the use of clock time – applies to the cold workers but not to the hot ones, who are able to slow down production and to disconnect their task production from the clock time of the cold workers. This is due to the fact that the two kinds of workers have a different notion of 'capital', the hot workers equating capital with their 'machines' and the cold workers equating capital with 'money'. I have also shown that the workers' different attitude to their labour, is constructed between the shopfloor and the neighbourhood, and not crafted, as for Burawoy, at the point of production.

The third conclusion is that capitalist organisations are not always disembedded from society. In fact, if the economy of the cold workers follows the rhythms and the logic of the market, the economy of the hot workers is embedded in a web of production and exchanges rooted in the neighbourhood and informed by the extra economic – at least from the point of view of the economists – needs of their families. Nevertheless, the chapter shows that economic institutions which are, like Morris, partially embedded in society, are not less exploitative. In the next chapter I will show that the embeddedness of economic institutions in society, ultimately increases the capitalists' profits by shifting the organisational and welfare costs of production onto the community of the workers.

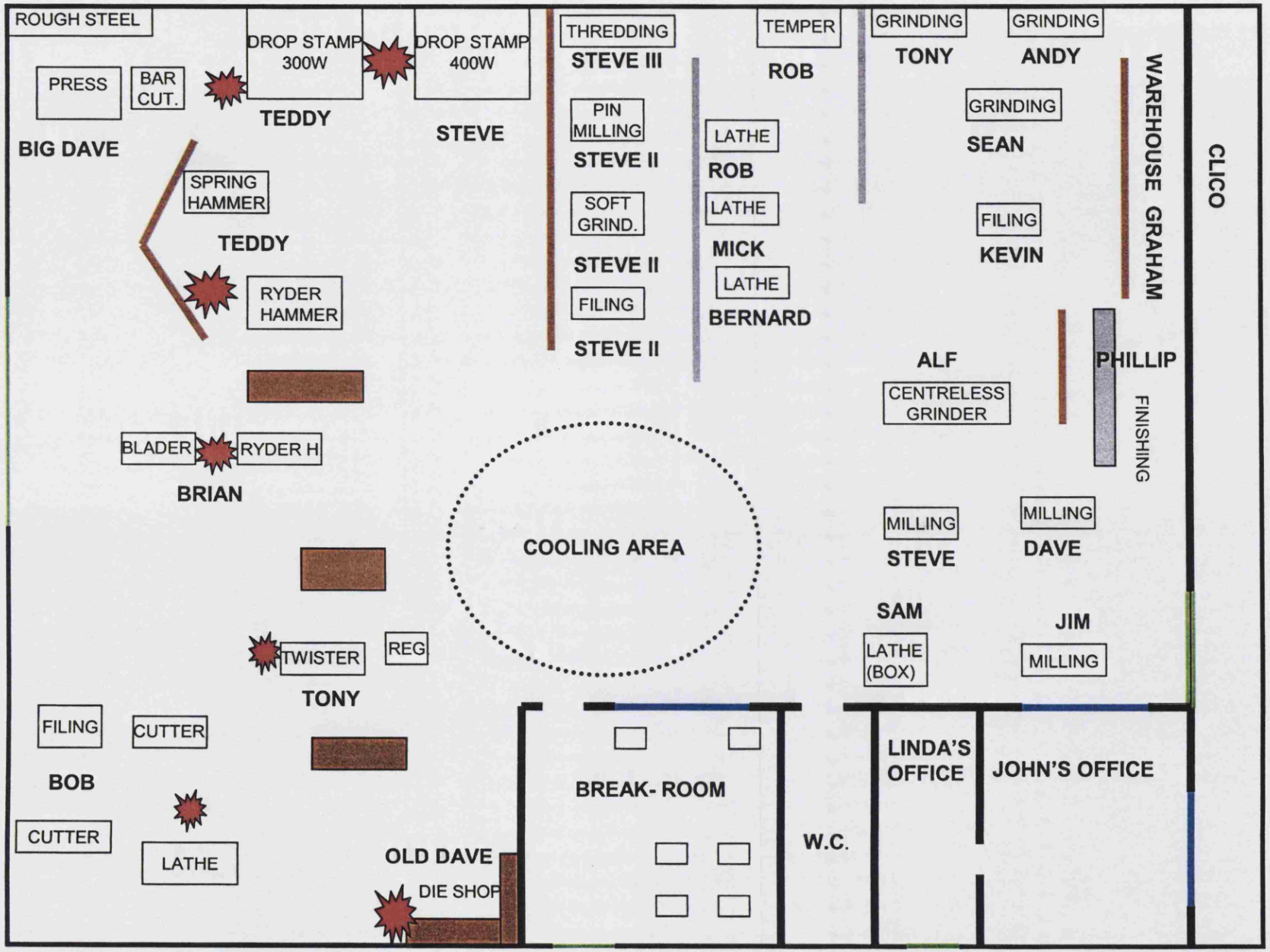
The fourth conclusion is that economic institutions do not need to be profitable in order to be efficient, and that firms like Morris survive not due to their economic profitability but because they mix 'accountable', with 'unaccountable' – illegal or informal – profits. First, Morris is profitable for Mr. Greid, due to the fact that he evades taxes, precisely by hiding the profits of Morris. For the hot workers, to stay in Morris is the most economically viable option, in that it combines its secure wages with the extra profit deriving from the sales of their services to local firms and 'friends' and with the costs and benefits related to the welfare of the entire household. For the cold workers, Morris provides short-term cash flow as well as insurance against the future. In fact, once they are substituted by younger and more qualified machine workers, they will migrate into the hot department and into Attercliffe where they will compensate their lack of economic capital by building up economic and social networks in the neighbourhood.

Thus, the short-term and utilitarian morality of the cold workers and the passionate commitment of the hot workers are not in conflict with each other, but are in fact functional to the reproduction of the condition of structural deprivation in which they have germinated. In fact, the illusion of a market transaction in the cold department and the illusion of group loyalty in the hot one, the maximisation of economic capital in the former and of social capital in the latter, hide the more fundamental truth that both classes of workers pertain to the same space of poverty. The 'hot department' and the 'cold department' are two temporary and permeable spaces whose lines and boundaries are continuously re-created by the workers throughout their lives and that reflect wider economic and social dynamics taking place in Attercliffe, based on the inward flow of young workers and old machines and on the outward flow of old workers and new capital.

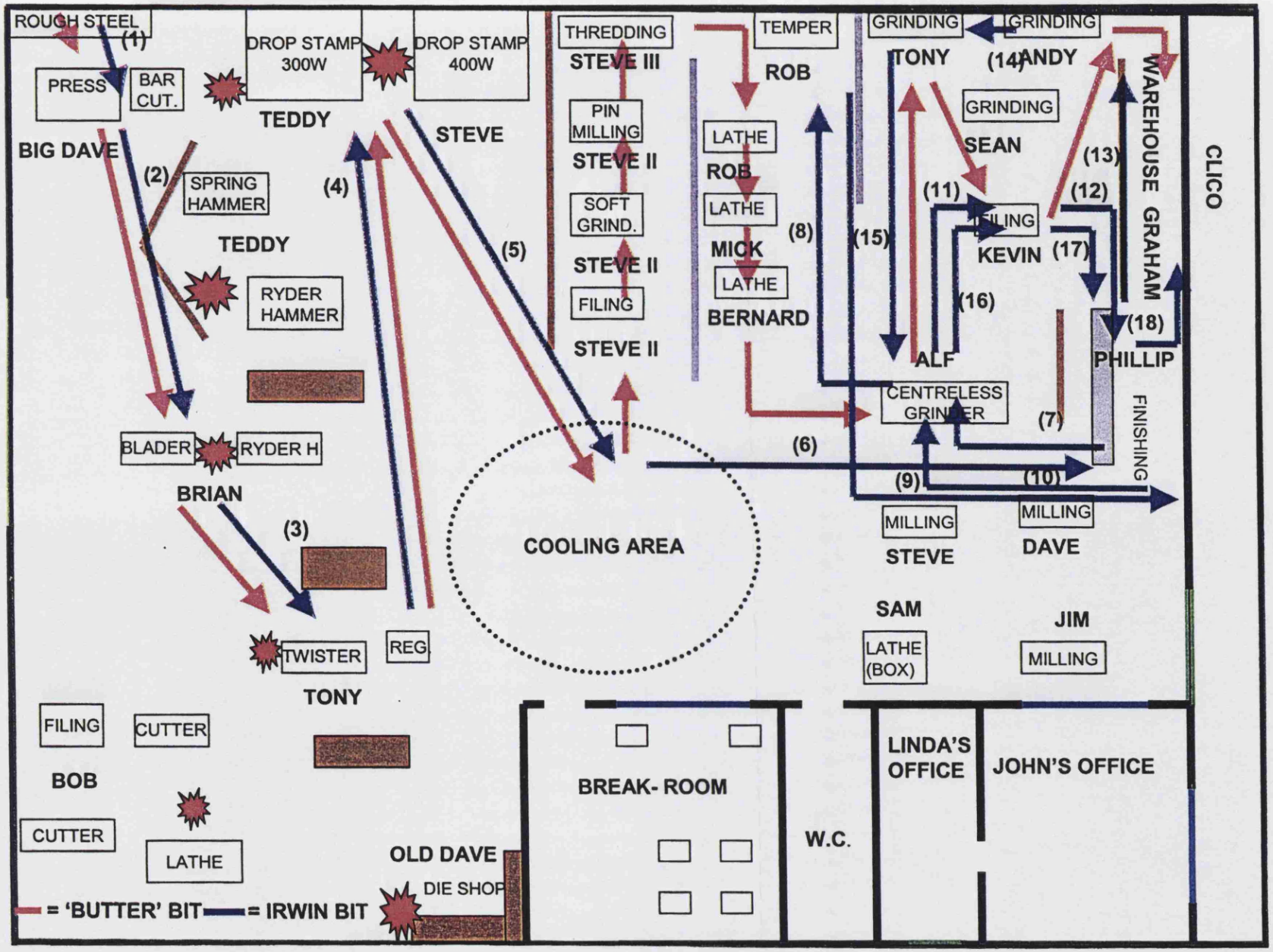
J. Carrier (1992) in his historical sketch of the emerging alienation in relations of production draws on Thompson, Braverman and Burawoy to argue that modern capitalist production entails a split in the workers' personalities between two opposite moralities. The morality of economic institutions 'is seen to be impersonal and regulated by abstract forces as 'the market', while the morality of the family 'is seen to be personal and regulated by personal forces like 'affection', 'creativity' or bonds between people' (ibid: 553).

In this chapter, I have shown that Carrier's claim of the increasing alienating nature of modern factory production, portrays factory production as 'more modern' than it actually is. In fact, in Morris 'early' and 'modern' capitalist technologies and social relations are blended together on the same shopfloor. The hot workers' strategy of maximising their social networks and the cold workers' strategy of maximising their wages, re-enact the strategies of the artisans and of the proletarians of the past; the peculiarity of Morris's case is that these two working class formations now share the same shopfloor, and the same spaces of poverty outside it. Thus, I suggest that the coexistence of the morality of 'home' and the morality of 'work' within the same space, more than their sharp separation, reveals the emerging alienation of modern capitalism, where the function of social welfare – in the past performed by the state – is now left to the 'industriousness' of its more marginal workers.

In the next part of this thesis, I will show the process through which the combined effect of de-industrialisation and of state economic and welfare policies, which fostered the welfarisation of casual labour, have re-invigorated the ancient strategies of production and of the re-production of the artisans of Attercliffe.


ROUGH STEEL
PRESS
BAR CUT.
BIG DAVE
DROP STAMP 300W
TEDDY
DROP STAMP 400W
STEVE
SPRING HAMMER
TEDDY
RYDER HAMMER
BLADER
RYDER H
BRIAN
THREDDING
STEVE III
PIN MILLING
STEVE II
SOFT GRIND.
STEVE II
FILING
STEVE II
TEMPER
ROB
LATHE
ROB
LATHE
MICK
LATHE
BERNARD
GRINDING
TONY
GRINDING
ANDY
GRINDING
SEAN
FILING
KEVIN
WAREHOUSE GRAHAM
CLICO
ALF
CENTRELESS GRINDER
PHILLIP
FINISHING
COOLING AREA
MILLING
STEVE
MILLING
DAVE
SAM
LATHE (BOX)
JIM
MILLING
TWISTER
REG
TONY
FILING
CUTTER
BOB
CUTTER
LATHE
OLD DAVE
DIE SHOP
BREAK- ROOM
W.C.
LINDA'S OFFICE
JOHN'S OFFICE

(Fig 10)


ROUGH STEEL
(1)
PRESS
BAR CUT.
BIG DAVE
DROP STAMP 300W
DROP STAMP 400W
TEDDY
STEVE
(2)
SPRING HAMMER
TEDDY
RYDER HAMMER
(4)
(5)
BLADER
RYDER H
BRIAN
(3)
TWISTER
REG
TONY
FILING
CUTTER
BOB
CUTTER
LATHE
OLD DAVE
DIE SHOP
= 'BUTTER' BIT
= IRWIN BIT
COOLING AREA
THREDDING
STEVE III
PIN MILLING
STEVE II
SOFT GRIND.
STEVE II
FILING
STEVE II
TEMPER
ROB
LATHE
ROB
LATHE
MICK
LATHE
BERNARD
(8)
GRINDING
GRINDING
TONY
(14)
ANDY
GRINDING
SEAN
(11)
(12)
(13)
FILING
KEVIN
(17)
(15)
(16)
ALF
(18)
PHILLIP
WAREHOUSE GRAHAM
CLICO
CENTRELESS GRINDER
(7)
FINISHING
(6)
(9)
(10)
MILLING
STEVE
MILLING
DAVE
SAM
LATHE (BOX)
JIM
MILLING
BREAK- ROOM
W.C.
LINDA'S OFFICE
JOHN'S OFFICE

(Fig 11)

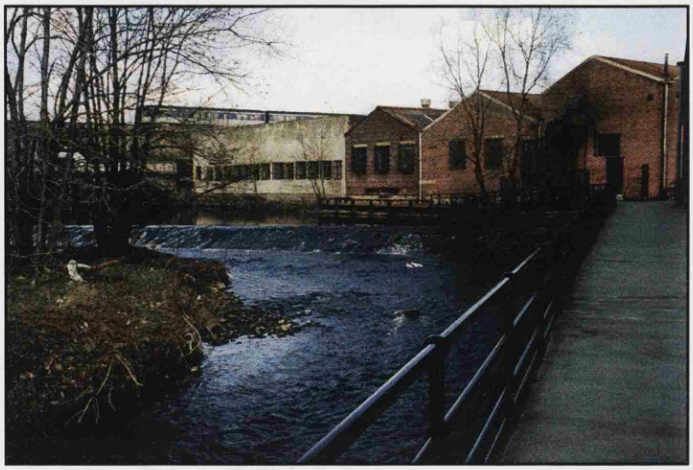


Figure 37. Morris from the river Don.

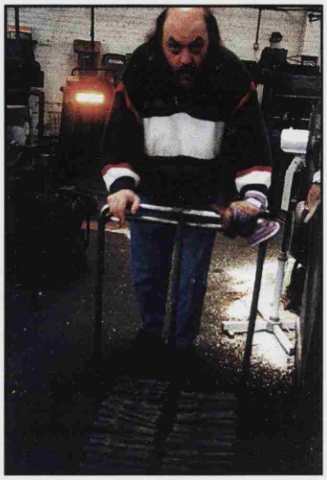


Figure 38. Big Dave distributes bits in the morning.

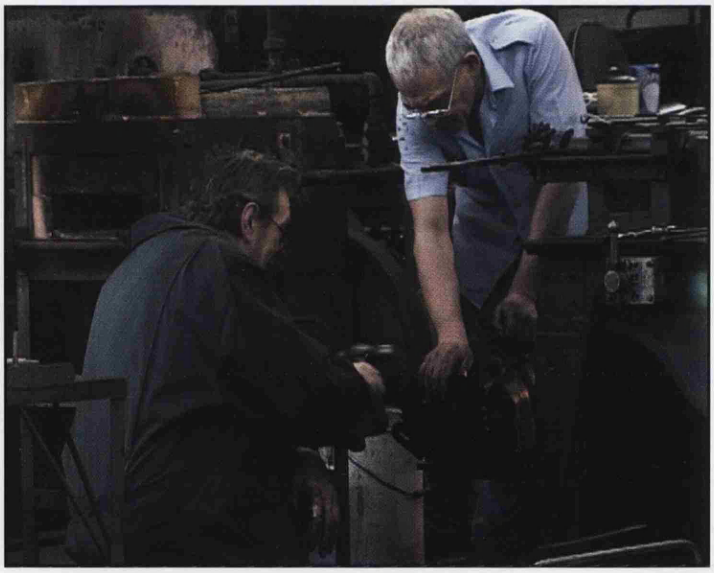


Figure 39. Bob and Tony repair a machine together.

Figure 40. Big Dave at the bar cutter.

Figure 41. Tony at the twister machine.

Figure 42. Teddy at the Ryder hammer.

Figure 43. Bob and Tony by the rococo' table.

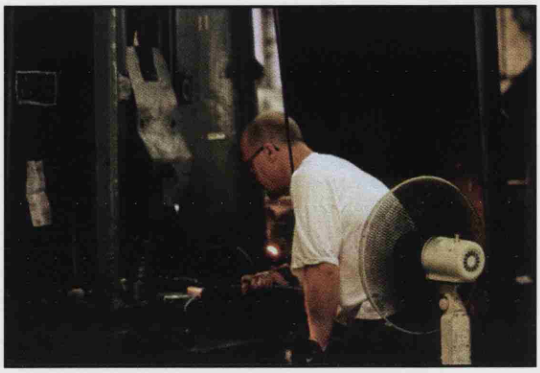


Figure 44. Steve at the 400 drop stamp.

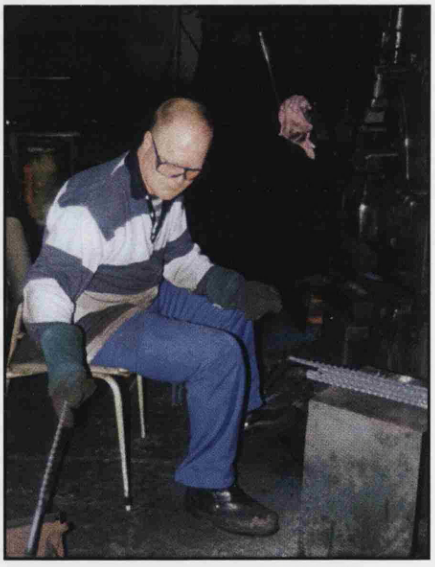


Figure 45. Steve at the spring hammer.

Figure 46. Teddy during a short break.

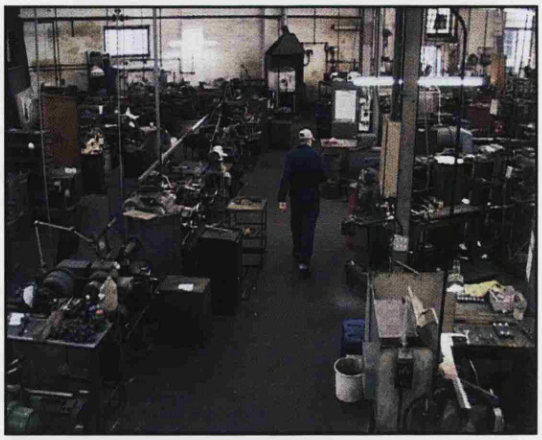


Figure 47. Rob walks onto the cold department after the break.

Figure 48. Andy on his wicker chair.

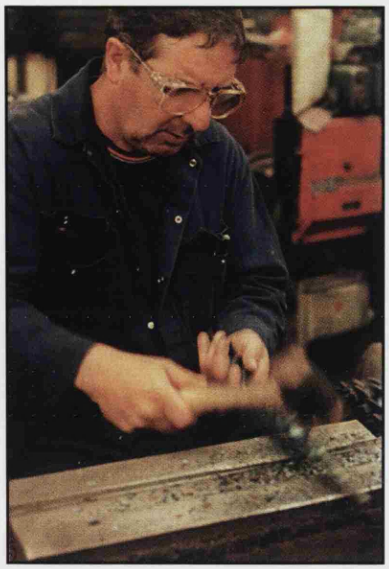


Figure 49. Alf straightens a 'butter'.

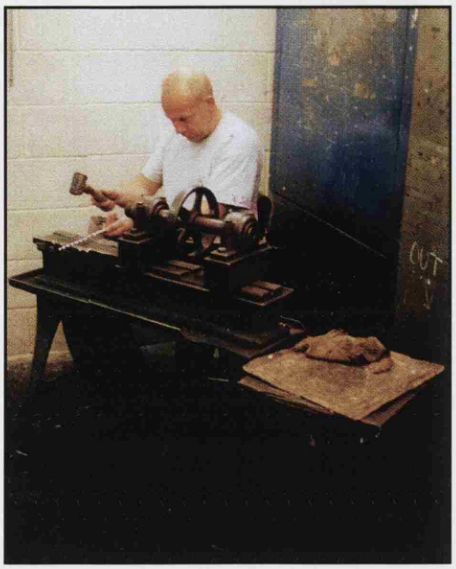


Figure 50. Kevin straightens a chisel bit.

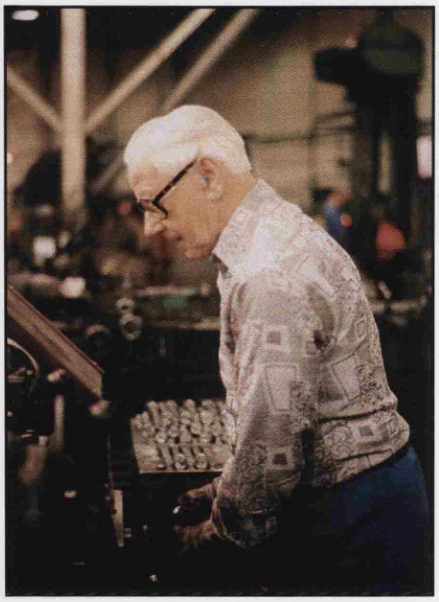


Figure 51. Old Joe 'filling a gap' in the cold department.

Figure 52. Alf at the centreless grinder.

Figure 53. Brian filing.

Figure 54. Discussing bonuses.

Figure 55. Tony grinding.

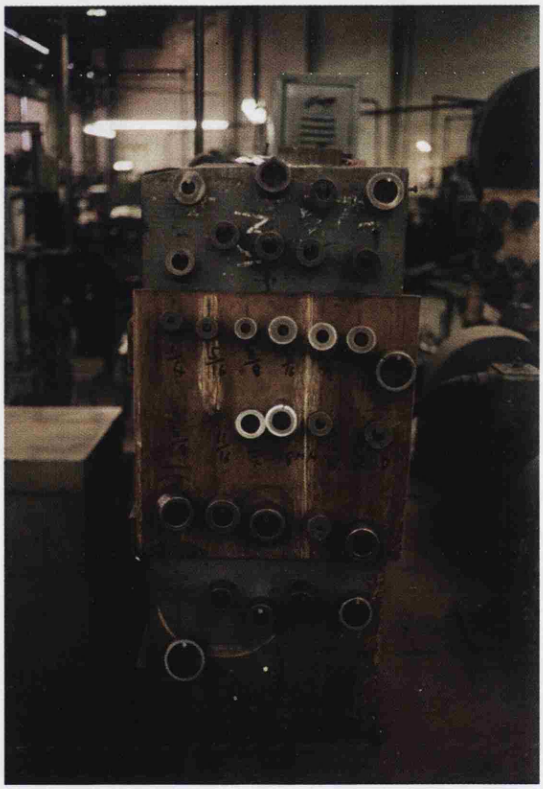


Figure 56. Samples.

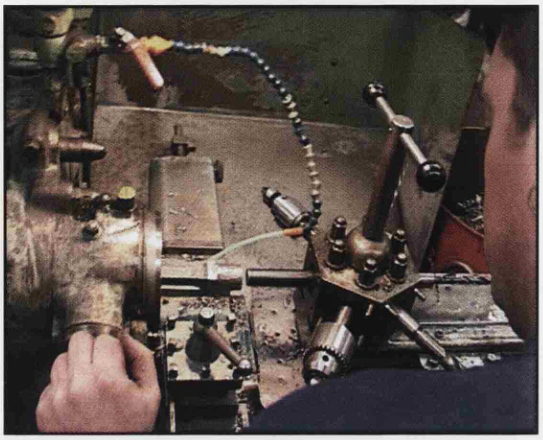


Figure 57. Steve 'speeding up' at the 'Churchill'.

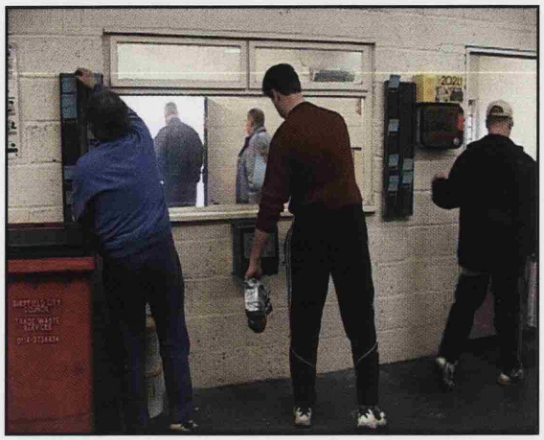


Figure 58. Clocking out.

PART THREE
WORKING CLASS LIVES

CHAPTER FIVE:

INFORMAL ECONOMY OF ATTERCLIFFE

Introduction

In this chapter, I show how the people of Attercliffe have survived the decline of the local steel industry through their informal economy. Unlike the picture given by social policy scholars of 'poor neighbourhoods' as socially fragmented by unemployment, drugs and crime, I show how the people of Attercliffe manage to struggle above the poverty line thanks to their rich and dense web of local productive exchanges. Besides, I show that these networks rest on and reinforce the social texture of the community, and explore the experiential aspects of the social interactions in the community. The chapter highlights the continuity between the social and economic dynamics taking place on the Morris shopfloor and the social and economic texture of the neighbourhood. Besides, the chapter shows that 'flexible production' has re-invigorated the ancient productive strategies of the artisans of Attercliffe that I have described in Chapter 1, and therefore that the 'new', post-industrial economy, intrinsically relies on 'pre-industrial forms' of labour organisation and informal economic transactions.

In the first two parts of the chapter, I address three issues raised by K. Hart in his seminal paper on the economy of Accra urban slums (1973). First, what is the relationship between formal and informal economic processes? Second, what kinds of transactional structure and rules prevail in the two sectors? Finally, what are the income distributive effects of the informal economy? In the third part, I evaluate the impact of the increasing interdependence between formal and informal economy in Attercliffe on people's perceptions of their social relations in the neighbourhood.
In this part, I follow up on Burawoy's concern with the relationship between different forms of capitalism and different forms of workers' consciousness. In his *'Manufacturing Consent'*, Burawoy claims that by enhancing hegemonic forms of labour organisation and a shared notion of civil society, monopoly capitalism dissolved the bases for class struggle (1979:197). The author concludes his later book (1985) by pondering on the effects of the dissolution of monopoly capitalism and its transformation into a new kind of 'despotic capitalism' associated with flexible production.

Indeed, in Attercliffe, flexible production has enforced a new form of despotic capitalism where wages don't allow the workers' reproduction so that these latter have to complement their production activities in the firms with a variety of informal activities in the neighbourhood. This situation, of waged labour that ensures the capitalist profit but not its reproduction is a totally new and unexplored phenomenon deriving from a combination of the disappearance of public regulation of work, economic liberalisation and the 'welfarisation of casual labour'. If monopoly capitalism reinforced the workers' sense of national belonging, as I claimed in Chapter 1, how will this strange mixture of wage labour and casual labour be perceived by the workers of Attercliffe? And now that the state has disappeared from Attercliffe and the wage workers have lost control over their own reproduction, what kind of social relations will they develop with each other? And will the disappearance of a national sense of belonging from Attercliffe, re-invigorate local political and social networks? Or rather will it fragment the local community even further?

Informal steel markets

Steel has two unique qualities: it can be entirely recycled and it is incorporated in almost every object of durable consumption (cars, dishwashers, houses). These two qualities taken together make steel objects transformable into raw material when its function as commodity has expired. In economic terms, this means that dead commodities are themselves exchanged in the scrap market and that the end of the consumption cycle marks the start of a new production cycle. The scrap market constitutes an important extra resource for the workers in the steel industry, both because they can control the amount of scrap that is produced on the shopfloor and because they generally live in areas where the council has relocated scrapyards and landfill sites.

In Morris, the reproductive qualities of the steel are magnified by three factors. First, its old machines are re-assemblies of old machines of all kinds. For instance the 'Rumbler' was made by Bob by fixing a machine used by builders to make concrete with a mechanical arm that Bob bought from the scrap dealer. Similarly, big Dave's break stamp was used by BT to cut wires before Bob adapted it to chop steel bars. Besides, when machines break down, Bob has to buy their mechanical parts in a variety of

second-hand markets (machine shops, scrapyards) or hand make them. Second, in Morris tools and machines are interchangeable objects. I have suggested in the previous chapter that the skilled workers perceive and use tools and machines in the same way. In fact, they can make machines into parts that are used like tools or re- aggregate single tools into more complex machines. Thus, whenever the owner buys a new mechanical part, Bob exchanges it with smaller tools or parts with which he can make a better-fitting piece for the machine. Finally, the tools produced in Morris can be used – with only a few modifications – in the production process of the firm or in the production processes of several firms located in Attercliffe. These factors suggest that the object produced in Morris undergoes a variety of small market transactions – as scrap, tools, mechanical parts and finished products – before it reaches the B&Q shelves. In economic terms, the prices of the bit sold in B&Q doesn't reflect a standard process of production and of price fixing, but rather incorporates a variety of diversified markets, hidden subjects and personalistic strategies of production and negotiation.

In what follows, I will point to only a few of these hidden markets.

(A) Scrap

Small scrap

'Stico&Co.' is a small family firm trading in small steel and non-ferrous scrap. Its immense and coloured scrap yard is located a few yards from Morris and hidden behind a long brick wall running along the main road. The main entrance is accessible through 'Charles Street' whose medieval cobbles saved the firm from relocation by the council. The firm – once owned by a prestigious family of Attercliffe merchants – is now owned and run by a Gypsy family. Fred is employed by the firm and spends his days sitting on a chair by a big weighing machine surrounded by scrap. He disciplines the people queuing with small objects in their hands, weighs these and scribbles a few numbers on a piece of paper which he gives back to the customers. After the weighing these enter into the office where the elder brother (the owner) and the mother of the family give cash in accordance to the weight of the objects. The rest of the family (two younger brothers) runs around Attercliffe with a van collecting scrap. I have been on this shopfloor several times and became good friends with Fred, whose project of publishing

his book of 'working class' poetry finally succeeded last year. The small objects traded by the firm are small mechanical parts of machines, copper television wires or clasps. Fred claims that most of the goods traded here are stolen and that the owner and his family use the van to rob houses in Manor. Although the Morris hot workers claim that the scrap they sell is of a superior quality to the scrap traded by the firm, Bob often walks to 'Stico&Co' to look for mechanical parts hidden under the piles of rubbish.

Machine scrap

Bob and the hot department sell their broken machines into a different scrap market. Morris sell two kinds of machines in the scrap market: the 'big' and the 'good' machines. Big machines are milling machines, turners and hammers, which cannot be further repaired by Bob, and which are too big and heavy to be removed secretively and without the consent of Mr. Greid. The fork-lift truck driver of CISCO moves these machines by the blue door and Ned, the scrap merchant, collects them once a month. According to Bob, the income generated from this transaction goes directly into Mr. Greid's pocket. The 'good' machines are the smaller cutters, twisters and hammers, generally located in Bob's fitting area. These machines are always reparable, according to Bob, given that smaller machines require easier welding and blacksmithing operations. Bob sells them to Ned without Mr. Greid being aware of it. The income from this transaction is generally split between him, Tony and Teddy, who help him to remove the machines. More than for the income deriving from selling the machines as scrap, this transaction is advantageous for Bob because he later fixes them for Ned, receiving up to £40 per machine.

Ned dominates the Attercliffe scrap market. He shows up every Saturday night at Khaled's with a fancy mod-like suit and black tie. He is the leading character in the 'owners' snooker team which every week shatters the hopes of Teddy and the other guys around the snooker table. The business between Teddy and the scrap merchant is usually dealt with after the snooker matches, when the owners gather near the counter, offering beers to the workers to console them for their latest defeat. Scrap merchants collect machines from the firms that close down. Merchants like Ned made a fortune out of the closures of the Attercliffe steel firms during the 1980s. Ned is said to have good connections with businessmen and policemen, due to their common involvement in the

business of contaminated scrap[181] in the past. Ned subcontracts the supply of scrap to local merchants[182] and employs unskilled workers, like 'shot-hand' Billy. Billy also made good money from the business. In fact, Billy – employed by the Ned to dismantle the shopfloor s of the area – sells to Gypsy traders all the scrap that is difficult for Ned to detect during his surveys of the plant and that is therefore classified as 'wastage'. Shot hand Billy admits that his job is very dangerous because it relies on ropes, chains and human 'hands' to demolish immense mechanical infrastructures. But the business, according to Billy, pays well, since 'every day there is a steel firm that closes down'.

Merchants like Ned also trade second-hand machines between small-sized firms. This market is extremely profitable in Attercliffe. In fact, Ned is able to buy a machine at a 'scrap value' which – thanks to the repairs and servicing provided by experienced fitters like Bob – he sells as a 'second-hand' machine. Bob, Tony and Teddy strongly rely on this form of extra income, and the manager and the owner of Morris don't discourage their informal transactions with Ned, given the firm's need to replace old machines with 'newer' ones. This market is so profitable that machines can travel thousands of miles and arrive back at the same shopfloor. For instance, the furnace of Brown Bayleys was sold to Turkey in the 1980s and from Turkey to Sweden in the 1990s, where it was spotted abandoned in a field by the manager of UNSOR who took it back to Sheffield, fixed it and used it until a few months ago, when the firm closed down. Wholesale scrap, furnaces, plate mills and rolling mills are traded in yet a different market where through financial management and subtle diplomacy overpriced dismantled mills fly from Sheffield to Egypt or Yemen, following the trajectories of international development.

(B) Tools

In Morris, the tools are owned by the firm in the cold department and by the fitters and skilled workers in the hot department. The tools used by the hot workers (hammers, chisels for dies, carbide tools[183], cutters, tongs for press-hammers) have two

[181] In the 1980s, the presence of uranium- and plutonium-contaminated scrap in the main steel companies fostered a series of investigations by the police. These investigations revealed frequent collusions between marketing managers and scrap merchants, in altering the chemical tests of the scrap and mixing ordinary scrap with contaminated or inferior scrap.
[182] Each of the big steelworks issue 'permits' or 'labels' to the main suppliers for different categories of scrap and these are allocated out to small subcontractors.
[183] Cutting tools used at high temperature.

characteristics: they are sold in very specialised tool shops and they are modified by the workers according to the peculiarity of their tasks. For instance, Dave's die shop is filled with small drills to smooth the surface of the dies. Since die making is a craft that has disappeared, these small drills are not for sale and Dave had to make them by modifying a set of dentist's drills. Similarly, Bob forges special steel tongs that can be used by the forgers without their arms being burned by the heat. As Attercliffe is crowded with forgers using old machines, tools that can make these machines work are highly valued. Thus, a small market for specialised tools is shared between the three second-hand tool shops along Attercliffe Road and the few fitters and blacksmiths who, like Bob, sell their own tools. The hot workers not only sell their tools as commodities in specialised local markets but also use them as precious assets to earn some extra income by fixing the machines of the small workshops scattered in the neighbourhood. For instance, Bob often disappears from the shopfloor with his big tool-box to fix the carcass-processing machine in the chicken slaughterhouse opposite the firm, or the baking machine at Teddy's bakery, or the machines of the 'teenage' forgers at Fowley Road.

Another small, but important, market that relates to the tool market is the market for instruction manuals, located in two second-hand bookshops at the edge of the city centre. In fact, machines have individual instruction manuals describing in detailed drawings their parts both in isolation and in their function in the overall structure. Instruction manuals explain how to 'open' and 'undo' the machines when they break down and how to change the function and position of their mechanical parts in order to set them up. Instruction manuals are not written but drawn and this makes them particularly precious as a source of workers' knowledge, given the low level of literacy among the elder steelworkers. Indeed, Bob explained to me that formal education was useless for manual workers and that 'when he was a chap, he had been educated on the shopfloor by learning to read these instruction manuals'. 'In fact good drawings' Bob added, his long fingers pointing to the dense diagrams drawn in ink on his notebook, 'are the first sign that people have got the 'mechanical aptitude''.

Finally, the wood-boring tools produced in Morris for B&Q are sold in alternative markets, for instance in the small 'interior décor' shop in Attercliffe Road, or Castle Market, where they are sold as drills for walls. These bits are normally the bits rejected

by the hot workers and slightly modified by Teddy and Steve with a few strokes of their spring hammers. Other bits rejected in the hot department – which unlike the cold department doesn't have a 'scrap diary' – are piled up in a dustbin by the blue door, and sold to Fred at the end of the week

Informal Production

(A) Tools

In this brief section, I will describe one of the instances in which Morris workers take subcontracted work from a small firm in the neighbourhood. As I have shown in Chapter 3, subcontracting involves sharing of some phases of the production process among different firms and involves exchanges of semi-finished products among workers who are socially connected in the neighbourhood. These informal circuits of production and exchange are usually organised by the workers without the involvement of the management and run parallel to the main production process. The workers subcontract to other firms the production of the bits that are less profitable to produce internally in terms of bonus, and work as subcontractors for other firms to supplement their wages.

I have already shown that the hot workers subcontract the forging of the planes to the 'teenage' firms in Fowley Street. Similar exchanges of semi-finished products extends as far as Bessemer Street, where approximately 200 people – bricklayers, furnace fitters, grinders, engineers, cutters, blacksmiths – work hidden in some 30 small Victorian workshops. Before offering an example of this subcontracting between Morris and one of the many small firms in Bessemer Street I want to stress that this kind of transaction has two implications. From the economic point of view, subcontracting supplements the income of the hot workers (who control the machines that make subcontracting compatible with the main process of production). From the social point of view, subcontracting allows them to maintain their social connections with the informal network of workers of the small firms scattered in the neighbourhood. Hence, subcontracting entails not only a short-term economic return, but also – as in the markets analysed by Alexander and Alexander (1991) – a longer term effect of maintaining social relations in the neighbourhood.

One day Bob sent me to one of these shopfloors, to check how many 'pieces' they needed from Morris. The art deco façade of the shopfloor revealed original green tiles under a thick layer of dirt. Two heavy elephants clung to the fragile external wall framing with their trunks the names of the founders of the firm: 'Joshua & Cover'. Joseph Joshua – an apprentice to an iron firm in Westphalia who came to Sheffield in 1867 after escaping the Prussian Army – and the farmer Robert Cover founded the tool firm in 1870. In 1892 they employed more than 700 workers, on the strength of its production of armament steel for the British government. The firm diversified its production into the bicycle industry and later into the razor business. This proved to be extremely competitive and by the 1920s Joseph and Robert went bankrupt. Today, the immense shopfloor revolves around a gigantic steam hammer press operated by four workers to make holes into cubes of steel. These cubes have been previously flattened by Bob and taken to the firm on a big trolley by big Dave, who also collects the money from the first-hand presser.

The work on the steam press hammer is an exemplary case of team-work. The team of four workers groups around the hammer. The first-hand is the head of the production team and his job is to hold the heavy piece of steel with long tongs under the press and to give it the right angle when the hammer strikes. The second-hand helps the first hand to hold the piece of steel under the press before the first hand turns it. He doesn't take part in the 'skilled' task of 'turning' the piece; he just 'holds' it between one stroke and the next. The third-hand polishes the dust from the cube of steel in between each stroke. The fourth-hand strokes the hammer using a long pedal that connects the hammer with the steam machine. These tasks are so interconnected that when Phil coughs, a wave of small reactions spreads around the rest of the team. In fact, when I first turned out on the shopfloor instead of big Dave, the fourth-hand didn't push the pedal, the third-hand consequently didn't dare to put his hand under the hammer to polish the steel and the second-hand was almost exploding with the effort of holding the cube of steel, while Phil – the first-hand – was looking at me suspiciously from distance. When I started to go to the shopfloor more regularly, Phil explained to me that the rules of organisation of the team-work around the steam hammer are more than 100 years old. In fact, in the past, the owner subcontracted the work to the first-hand who distributed the cash to his workers at the end of the week. The organisation of the shopfloor looks very much the

same today. Phil organises the workers and distributes to them the 'wage' that he negotiates with Steve, a young German-speaking manager who visits the shopfloor only twice a week. Phil also negotiates the prices of Teddy's 'flattening' of the cubes with Bob. Bob is often 'out for a commission' and it is not easy for John, who rarely steps into the hot department, to know whether the commission is for Bob or for Mr. Greid. Besides, it is big Dave who deals with the heavy duty of carrying the semi-finished products to Bessemer Street, and of collecting the money, and his absence from the shopfloor is generally attributed to his drinking habits, rather than to his business activities.

There are two patterns of participation of the workers of Morris in the informal chain of production and exchanges in the neighbourhood. At a first level, the decision of outsourcing or of accepting outsourced work is taken following rules agreed upon by the whole workforce. Thus, at the beginning of the day, Mick – the shop steward of the cold department – and Tony have a briefing on the amount of 'cheap' or 'difficult' tools – both involving low bonuses – that they will outsource to other firms and on the amount of more remunerative work that they will produce for other firms. The basic economic rule for this kind of transaction is to swap the production of tools with low bonuses for tools with high profits. This web of outsourced production among the different firms of the area is made possible by three factors. First, the lack of supervision on the shopfloor which allows the workers to re-organise their production process according to the requirements of both the main process of production and the informal one and to add some additional tasks – like distributing and collecting semi-finished products in the neighbourhood – to the productive tasks formally recognised by the owners and the managers. Second, the physical proximity of the small firms in Attercliffe and their location in 'off-limits' areas. Physical proximity increases the 'economies of distribution' between producers, and their location in dangerous areas – generally avoided by people not belonging to the neighbourhood – minimise the risks of visibility from police, managers and passers-by. Finally the existence of unequal relationships of power between the different firms of the informal network[184]. In fact, cheap tools are generally outsourced to firms with lower bonus levels and whose workforce is either less skilled or have lower wage structures, as in the case of the forge

[184] The same unbalanced power-relation between main contractors and subcontractors exists in the Japanese building and steel industries described by Gill (2000).

in Fowley Road. Similarly, the production of profitable tools is outsourced to Morris by firms whose average bonus system is higher than Morris's and whose workers, like Phil, enjoy considerable fame and bargaining power in the neighbourhood.

This is the reason why, according to Bob, the flattening of the cubes for them 'is more a cost than a profit' and they accept this production only for Phil's sake. 'You can't turn down a friend when he needs you even if it is not economically advantageous', Bob explains. But the fact that Phil is highly respected among the old forgers of Attercliffe and his fame and personal connections spread as far as Manor, Brightside and Firth Park is advantageous not only for the workers, but also for the owner. In fact, Phil provided the connection with the small drill firm in Bessemer Street (whose only machine cannot process drills unless Steve modifies their base with the spring hammer) and with two other firms that are now stable customers of Morris. But in the power relation between Bob and the 'guys' at Fowley Road, it is Bob who has the upper hand. Their low incomes, associated with their mono-production of axles to be sold at Castle Market, have greatly benefited from the expansion of orders that the friendship between Mark's father and Bob made possible. Mark often stresses the fact that 'between Bob and I it is not only business. He is an old friend of my dad, an old face in Attercliffe. He is a good one'. These networks of production and exchange of semi-finished products parallel the main production lines of the local firms and yet are strictly interconnected with them. Besides, they are made possible by the flexibility of the old machines[185] and by the lack of supervision on the shopfloor.

Institutional economists[186] claim that the lack of supervision is a feature of the so-called 'clan' organisations, where the co-ordination among the workers happens through informal interactions and through the 'culture' of the workers. Clan organisations are said to be efficient, precisely because decisional and organisational processes are taken at the level of the shopfloor, where the 'know-how' is located, and without time-consuming interventions of the middle management. Thus, paradoxically, the organisation of labour of Morris and of the other firms of Bessemer Street, mirrors the organisation of labour of firms that management manuals would describe as 'efficient

[185] Both in terms of variety of tasks that they allow and in terms of costs. In fact, small presses, forging machines and oven, can be switched off when they are not used and can be used intermittently, rather than continuously, as for modern machines.
[186] Ouchi (1980).

and proactive organisations'. I suggest that the owners welcome 'clan' organisations, because they shift the organisational and welfare costs of labour onto the community outside the firm. As in the case of Bob, Teddy and Tony, their involvement in the informal economy of Attercliffe, involves almost double hours of work, remunerated at an hourly rate of £2, and is motivated by the fact that real wages at Morris are below the minimum level. Also, the informal economy provides the workers with a safety net when the firm goes on short-time and alleviates the potentially disastrous economic consequences of the frequent closures of the firm, and therefore makes these closures possible. Thus, the lack of supervision opens the boundaries of small firms onto the social and economic texture of the neighbourhood, where the profits of the owners, and the supplement of the workers' wages come from.

Thus, the lack of supervision in the small firms, the versatility of their machines and their physical proximity, transforms Attercliffe into vast informal productive networks. These networks are not only productive, but also redistributive. First because they allow the workers to complement their wages and bonuses with a flow of additional income. Secondly, because these networks attract subcontracted work from the main steel companies and erode the margins of profit of the middle-sized companies. In fact, small subcontractors have lower organisational and labour costs than the middle-sized ones, and therefore they are able to make cheaper bids to the main contractor. As a result, the structure of the steel sector is changing, and income is being redistributed from the families of the wage workers and of the entrepreneurs of middle-sized companies, to the petty capitalists and journeymen of Attercliffe. This flow of income into the Attercliffe productive networks does not imply that income is equally distributed within the network. In fact, firms with greater bargaining power are able to impose ridiculously low prices on smaller contractors, as happens between Morris and the guys of Fowley Road. Nevertheless, the smaller firms and the younger workers involved in these networks, increase their 'order book' and revenues, and, slowly, they also increase their profits and bargaining power.

In Morris, the second pattern of participation in the informal productive network of Attercliffe involves more restricted spheres of exchange. In fact, some productive transactions are restricted to Bob, Teddy, Tony and Steve, that is, to the workers of the hot department only. This is due to the fact that the hot workers enjoy longer

unproductive times than the cold workers whose rhythm of work is tightly linked to the piecework system. Besides, given their deep knowledge – highlighted in Chapter 4 – of the machines and of the production process, the hot workers use their machines like flexible tools and adapt them to a variety of different products. This fact makes production in the hot department incredibly similar to the JIT production normally performed in high-tech industries. For instance, one day a businessman showed up on the shopfloor asking for Bob. The man asked Bob if he could produce 'umbrella bits', that is tools for an experienced wood-borer which disappeared from the market in the 1950s. Bob told him he could, but it would be expensive. After they had agreed, Bob designed the bit, following the specification in an old engineering catalogue that he had at home and drew the lines of the die that was to be made. Dave made the die, Brian made the blade that was stamped by Teddy, and Bob polished it in a couple of hours. The bit required 4 hours of Bob's work, two from Dave and 10 minutes from Teddy and Brian. It was sold for £40[187]. Today, the businessman gives Bob orders for an average of 15 bits every month, whose unit price is now £20. Bob told me that the initial price had been set artificially high to test the businessman's intentions and to pay for the start-up costs of new production (the time spent to make a new die and to forge a new cutter). Now that the die for the umbrella bit has been made and stored by Bob and the production time for each bit has therefore decreased, this business has became remunerative. In fact, it brings an extra £100 monthly to Bob and Dave an additional £50 to Teddy and Brian. In addition to the umbrella bit, the hot department produces three other products independently from the rest of the firm for which it receives an income per month of about £900; of this, 50% is divided between Bob, Dave and Teddy, and the remaining 50% is spread among Big Dave, Teddy, Brian and Tony.

This additional income is not totally unknown to the owner, who nevertheless doesn't openly discourage it since Bob's business networks in the neighbourhood are fundamental to increasing the production addressed to the local market when the orders of the stable customers of the firm decrease. If the cold workers are cut out from this round of informal exchanges, they nevertheless benefit from Bob's social connections with the local subcontractors and contractors. In fact they receive the extra profits deriving from the firm's collective outsourcing of the less profitable bits and from their

[187] Divided as follows: £15 to Bob and Dave, and £5 to Teddy and Brian.

production for local contractors. Besides, they also sometimes share the revenues deriving from the sale of scrap machines and tools to the local scrap merchants[188], these latter made possible by Bob and Teddy's friendship with the local entrepreneurs and by big Dave's continuous movements in the neighbourhood[189]. Sometimes, Bob and Teddy act as middlemen between different firms in Attercliffe, simply collecting from, and distributing tools to, local firms and receiving a small margin on the value of each order (generally 2%).

I have never understood the logic with which Bob negotiated the prices with his customers, nor the rationality of Bob, Dave and Teddy's informal economy. In fact, they ended up working three extra hours per day and also during the weekends, with a scant £2 per hour profit rate. Nevertheless, according to Tony, this informal production gives Bob, Dave and Teddy an extra £90 weekly, on top of their monthly wages and an extra £50 to big Dave, Steve and Brian. Thus, the informal economy of Morris benefits the hot and cold workers in different ways. The hot workers increase their weekly wages by almost 50% (and double the amount of time they spend working); whereas the cold workers increase their control over the piecework system. In fact, this flexible system of externalisation of production allows them to produce always the most profitable bits available on the 'local' market and to outsource the less profitable ones.

(B) Steel

The workers of Attercliffe are also employed as contractors for 'Abeta', 'Forgemater', Corus or other steel firms of the region. The job of the contractors – furnace bricklayers, cleaners, labourers at the Coke caverns, furnaces, or rollers – are normally seasonal and concentrated during the first two weeks of August (when the workers' holidays are concentrated) or in the months before Christmas, when the demand for steel generally falls and men are made redundant. The working conditions of the former kind of subcontractors are extremely unsatisfactory. In fact, furnace cleaners or bricklayers like Brian, are not only paid the minimum wage but also not granted any safety equipment

[188] For instance, when CISCO was built inside the premises of the cold department, its workers were allowed to use the fork-lift truck, with which they managed to hide a big milling machine that they later sold with the help of Bob.
[189] Big Dave arrives at Morris, and leaves, two hours later than the rest of the workforce. During this time, he usually deals with the firm's informal transactions.

and welfare provision. As a result, furnace cleaners and bricklayers use deteriorated and obsolete protective equipment, entering inside the still hot furnaces without oxygen masks and with old-fashioned wooden clogs bought in the local second-hand shops. During their breaks, they can't use the company premises and they therefore eat and rest by the machines, their hands still covered with grease and scale, with dust and waste all around them. At the end of the day, they sleep in prefabs inside the company premises, in their vans or in temporary accommodation scattered along the motorway. Contractors like Brian can spend up to a month working for different firms scattered in the region.

Unlike them, forgers, rollers and slingers don't migrate from Attercliffe, but are employed in the local steelworks when these latter cut jobs and replace wages with subcontracted work. Steel companies employ these contractors not only on their premises, but also on shopfloor s located in Attercliffe. The steel entrepreneurs prefer to keep contractors and 'core' workforce separated for two reasons. The first, is to preclude interactions between the non-unionised contractors and the unionised 'core' workforce. By segmenting the two kinds of workers, they hope to foster competition between them. The second is to avoid the organisational costs of the contractors. These semi-derelict shopfloors have obsolete technology – old rolling mills, manual cranes, broken tools – and are located in unstable ancient buildings. But the Attercliffe labourers are generally familiar with both. For instance, 'Abeta' subcontracts the production of low quality steel bars to the Tinsley British Steel rolling mill (called by its workers the 'British steel museum'). This shopfloor consists of an immense empty space hidden inside a courtyard that is only accessible through a small street leading off the A25. The 1945 rolling mill and a line of stacks are the two working spaces on the shopfloor. Bars are rolled by 3 workers under the supervision of Jack, a skilled ex-Abeta worker, and manually loaded on the rack by three other workers. Every morning, an Abeta lorry unloads the billets and loads the finished bars. According to Paul[190], the costs of production of these bars are 20% cheaper than the cost of producing the same bars inside the main company.

[190] Paul is an ex-steelworker friend of Jack, who took me to this shopfloor four times during my fieldwork.

Attercliffe is a major centre for recruitment of casual labourers for the steel industry[191] in South Yorkshire for three reasons. First, because its population is not in long- term unemployment and this makes it more willing to accept short-term work[192]. Second, the high skills of its casual workers and their ability to produce with obsolete machines provides the steel entrepreneurs with cheap and high quality labour. Finally, because – as I will show in the next chapter – the cost of reproduction of the Attercliffe workforce is extremely low.

(C) Construction Industry

The construction industry employs 5% of the working population in Sheffield, but the real scale of employment in the industry is said to be much bigger than the official statistics claim. In fact, most of my informants' families have at least one of their members employed informally in the building industry. As Eccles has demonstrated, the organisational structure of the building industry consists of constellations of small groups of subcontractors usually recruited locally. These subcontractors own their tools, organise production independently from the main process of production and generally have a remarkable degree of bargaining power in negotiating the prices for their services with the main contractor. Because of its reliance on seasonal and part- time work, the building sector often provides a useful complement to the incomes of the Attercliffe steel labourers. I have already shown that in Attercliffe the housing market and the construction business were controlled by local steel artisans and small entrepreneurs until the 19th century and that the builders organised their businesses in networks of apprentices and kin, often overlapping with the kinship networks of the local tool makers. There are some striking resemblances between the organisational structure of the building industry and the organisational structure of the tool industry. Both trades require a mixture of specialised craft, long-term apprenticeship and heavy labour; they require low capital to be started and allow the workers' ownership of the tools. Besides, they are both organised in the form of subcontracting where the skilled artisan negotiates with the main contractor the price for the finished job that he

[191] My argument cannot be supported with official statistics for obvious reasons. Bernard Rooney, the ISTC branch officer, claims that there are 10,000 contractors in the South Yorkshire steel industry. According to Cath Mackey, of the Economic Development Office, at least 20% of them live and work in Attercliffe.

[192] This point has been made by Westegaard and al.

distributes within the working group. Finally, the contractors are generally related by ties of friendship or kinship.

Historically, in Sheffield the two trades relied on the same raw materials and skills. In fact, the districts of cutlers developed in the 18th century along the limestone formations preserved under the earth of the Rivelin and Loxley Valley and later along the river Don. Limestone was a fundamental element in the crucible process, not only because it was the material from which clay pots were made but also because limestone powder was added to modify the quality of the steel melted in the crucible. Besides, limestone-made red bricks were the main material with which the grinders crafted the landscape of their valleys and with which they created weirs inside the rivers and paths, dams and gorges in the woods. This fact helps to explain why in Sheffield brick-making developed in the ancient cutler districts, and why the business is still concentrated there today. Finally, the ovens and furnaces of the steelworks are internally made of refractory bricks whose correct layering ensures higher precision in the melting process, the correct fusion of the scrap and prevents electricity dispersion and furnace deterioration. Bricks are layered inside the furnace following the same method and with the same tools used by builders for construction.

In fact, Brian – my snooker mate – was a furnace bricklayer and also a building contractor. He hired the tools for his building businesses from the local 'Hire Shop' – after having received a loan from Mr. Taher [193] – and recruited his workforce at Khaled's pub: Teddy's grandson, Tony's son or some other 'Cliff lads' willing to spend some weeks out of the neighbourhood and needing some 'quick and easy money'. In Attercliffe the building sector includes several different sub-categories of work: 'interior decorating', 'demolition', 'landscaping', 'redevelopment', 'hard gardening'. Most of these activities are contracted locally by the city council to accomplish the transformations that this latter imposes on the neighbourhood and on its physical and economic landscape. Sometimes the main contractor is a local entrepreneur like Fred, who is involved in small speculations and local redevelopments in the empty spaces and hidden streets that passed unnoticed by the planners of the city council. In other instances, the main contractors are based in London or in foreign countries (Norway,

[193] The rate of interest is 20%.

Sweden) where Brian and his mates travel by van and disappear for several weeks, spreading a feeling of excitement and melancholy in the Pub.

Khaled's

In this section, I describe the social interactions taking place at Khaled's, one of the four Attercliffe pubs where Teddy, Tony, Brian and I spent our Friday and Saturday nights. People don't go to Khaled's only 'for a pint', or for pleasant social interactions. Khaled's is also a market (of labour, stolen goods, scrap, drugs and sex) and a sort of 'community centre', where old people play dominoes and bingo; single mums can safely leave their kids for a few hours; and heavily drug – or alcohol – addicted people find a warm and friendly place to sit and talk. At Khaled's the people of Attercliffe build political and social alliances, and exchange goods, jobs and social services. In the words of some sociologists, they build 'social capital'. Some social scientists[194] claim that the building of social capital, rather than the channelling of economic capital, should inform public policies of local social and economic regeneration. According to this view, social regeneration should be decentralised to local communities, rather than planned centrally by the state, because they 'know best' what their social interests and needs are. Decentralisation is also assumed to be good for the economy, because it reinvigorates local networks of flexible and small-scale production[195]. In Sheffield, these two assumptions are mirrored in 'Objective One', the legal framework through which projects of 'local social and economic regeneration' are funded. 'Objective One' funds community projects and provides tax exemptions to small firms, thus, effectively externalising public welfare services and fostering the spread of small firms, like Morris, which evade taxes and pay below the minimum wage. In theory, there are more than 200 *listed* community associations in Sheffield; in practice, most of these listed community centres are closed. Thus, given that the money of the central government disappears into the pockets of local community leaders and petty capitalists, the Cliff lads and the Yemenis resort to unemployment or disability benefits, and to their networks of informal welfare services and economic transactions, to survive in the

[194] Fukuyama (1995) and Putnam (1993).
[195] The economic liberalist assumptions underpinning the notion of social capital are shared by Labour and Conservatives alike. For a Conservative version of New Labour's 'Third Way', see: Rt. Hon Oliver Letwin MP, 8 October 2002, 'The Moral Market: why Conservatives believe in social capital'. Speech delivered to the Centre of Policy Studies.

absence of other viable alternatives. As a matter of fact, these scholars are right: the Cliff lads' informal economy, and their social networks, make the local businesses 'more competitive', and the state welfare less expensive. Nevertheless, in this section I show that what is efficient 'at the level of the system', is socially disruptive for them.

In his paper on the social relations that develop among the Frafras in the urban slums of Accra, Hart (1988) claims that urban casual labour, petty commodity production and informal market exchanges encourage durable forms of association located between the 'contract' that regulates social interactions in societies with a developed state and civil society, and the 'status' that regulates the interactions in societies with strong kinship institutions. In the absence of wage labour and formal market exchanges social relations are regulated by 'the trust generated by shared experience, mutual knowledge and the affection that comes from having entered a relationship freely, by choice rather than status or obligation' (ibid: 185). Hart's paper is particularly interesting because it investigates the experiential aspects of the social relations that develop in the absence of mechanisms of social co-ordination provided by the 'family' and the 'state'. Its analysis can be fruitfully applied to the social interactions that develop in Attercliffe, where the disappearance of the state, and the crisis of the nuclear family, are reinvigorating the welfare function of the pubs, local loyalties and friendships, and informal economic networks. My intention is to follow Hart in the evaluation of the 'friendship' and 'trust' that develop inside places like Khaled's, drawing on the experience of the friendship that I built with Teddy, Tony and Brian. My intention is to shed light on the contradictions implicit in the process of creation of social capital.

Mr. Khaled came from Yemen 50 years ago to work in the Sheffield steel industry thanks to the help of a British soldier that he had met in Aden during the Second World War. After a period of political activism, he became shop steward at the Brown Bayleys rolling mill and when the firm closed, he took advantage of the prestige he had accumulated locally to apply for a loan to purchase the 'Melters' pub which he renamed 'Khaled's'. Mr. Khaled is the head of the Yemeni community in Attercliffe, and he deals with funerals, marriages, legal claims and visa applications and employs about 60 Yemeni and non-Yemeni people in his local brothels, pubs, restaurants and scrap yards; plus a small group of young drug dealers who play the pin-ball machine at Khaled's

until early in the morning. Khaled lives at the top of the building together with Freda, Fred and Lucy. The stairs to his home are visible behind a locked cage by the counter.

At Khaled's, the different strata of what used to be the local working class – now segmented into 'unemployed', 'workers' and 'self-employed' – mix together.
The pub consists of three main rooms opening onto a central area where the local ale – 'The Stones' – is served. One room is reserved for women to play pool, in another Yemenis watch television and play darts and the third room is taken by the 'Cliff lads' for their snooker matches. In the past, Yemenis have shared many political and economic struggles with the 'Cliff lads' and therefore they are said to be perfectly integrated. 'Prince Naseen', the Yemeni light weight boxing champion who trained in Darnall Road, is often referred to as 'an Attercliffe lad'. Nevertheless the boundaries between the three rooms are invisibly marked so that Yemenis rarely end up in the snooker room, the lads rarely bring their beers into the television room and women never engage in direct confrontations with the lads around the snooker table.

The 'unemployed' are people like Steve who live on only income support. Steve drinks throughout the week and when he comes to Khaled's he has only £2 to enjoy his night out. The 'unemployed on the dole' are people like shot-hand Billy who add to their state benefits a variable income deriving from their casual labour. Billy can buy drinks and is therefore offered drinks and the same respect due to the 'workers'. The category of 'workers' includes all the occasional workers who are both on state benefit and have stable jobs, like Teddy. Finally, the 'self-employed' or 'owners' are ex-workers who used their redundancy money and local connections to deal in scrap, steel or coal. The workers are split between the respect they have for these self-made men and the distaste they have for middlemen, who 'exchange but do not produce'. Finally, the permanently disabled – like Terry the Gardener and Mad Jack – follow the activities of the pub in slight isolation, given that they lack of fingers to support their cues or to display golden rings on Saturday nights. Nevertheless, they are respected for their generosity. In fact, because disabled people on income support cannot have more than £3,000 in savings for the whole year, they often spent half of their compensation money buying drinks for the lads.

At Khaled's, economic and welfare resources are redistributed and local politics discussed. Indeed, the main function of the snooker room is to distribute jobs locally. The 'Labour Exchange', once facing the Police along Effingham Road, was relocated in the town centre and renamed the 'Job centre' more than twenty years ago. Today, local people in search of local jobs don't even bother to walk into the 'Job-link' in Attercliffe Road, a private agency contracted by the council and run by Amid, a Pakistani son of a bus driver whose distaste for British people struck me during my first job interview. Local jobs are carefully allocated and their pay negotiated during the snooker matches between the 'owners team' (composed of Ned, the scrap merchant, Mick, the steel merchant, Fred, the building general contractor, and Joe, the coal merchant) and the workers' team (Tony, Teddy, Brian and myself). Other economic matters discussed at Khaled's are the orders of stolen goods that Bill, the swap shop dealer, collects near the counter; the planning of the logistic details concerning the transportation and storage of spirits, tobacco and drugs in the storage containers along the river Don between Khaled's and Teddy's cousin; Brian's recruitment of builders; shot-hand Billy's' scrap deals with Steve, the Gypsy, and the mutual exchanges of services (plumbing, fitting, building, removing) and the long discussions on their equivalences[196] and counter-obligations. Finally, in the pub, Teddy makes business plans with the forgers of Bessemer Street and organises the exchanges of subcontracted production between Morris and the other firms of the neighbourhood.

Secondly, the pub performs several small and yet fundamental social functions. One of them is to provide care for the elderly and lonely. For instance, Alf used come to the pub four days a week at 7 p.m. to have a chat with Teddy, Brian, Tony and I, and to spend some time playing bingo and dominoes. His very old age and lack of relatives was a constant concern around the table when Alf didn't show up at the pub, as well as the condition of his 'rusted' pacemaker that sometimes failed and caused him heart attacks. Alf was also interesting to listen to and we all laughed at his description of Johnny 'the flying cat' (the Attercliffe cat that after the Second World War was so skinny that his flabby skin had folded into two lateral wings) and listened carefully to his stories of work, usually punctuated with jokes addressed to Tony who started to

[196] Following Polanyi (1944), Halperin (1998) claims that the notion of equivalence is a fundamental principle of Cincinnati's East End informal economy. Halperin defines the principle of equivalencies as follows: ''equivalencies describe how much and what kind of particular good is appropriate in a given context' (ibid: 138).

work at the face of the Carbrook mine under Alf's supervision. Similarly, Jackie, the widow, often popped in at Khaled's, her eyes filled with tears, looking for someone to speak to about her loneliness following the death of her husband. Terry the gardener provided legal help on welfare issues and was always willing to share his vast knowledge of the intricacies of the DSS with some pub mate in exchange for a few pints. Local pubs also offered sleeping facilities to the relatives or close friends of the pub tenants, like at Teddy's cousin's Traveller pub where Teddy and his daughter, Clare, retreated when his home was overcrowded. Sometimes, young girls popped into Khaled's to leave their infant babies for a couple of hours or for the evenings and mums left their young children at the line dance course every Saturday night. Khaled's was a place where persons without families or people who needed help independently from their families exchanged services and assistance. Sometimes, it was not enough to make up for the solitude of its customers, as in the case of Brian, whose long absence from the pub was discussed at length by the committee before it was decided to break into his home where he was found dead.

In the snooker room local events were animatedly commented upon: the recent death of the Yemeni labourer crushed under 200 kilos of steel bars at 'Special Steel'; the disappearance of the big carp from the Darnall fishery and the dodgy deals of its owner; the decline of the heroin market and the rise in the consumption of crack among the local lads; the heroic action of Billy the Bull, who reacted to the bullies of the manager of Spring&Co by sticking the manager's head in the furnace; and the increase in prostitution in the city centre, which threatened the precarious survival of the local brothels. News of the neighbourhood – job cuts, fights, police raids, fishing matches – constituted the core of Khaled's political discussions and with the exception of 'mad Jack' people never got involved in 'high politics'. Mad Jack was the only person in the pub to be allowed to make general political statements and to openly declare his communist beliefs, his disgust for the Royal family, the City of London workers and the politicians of the city council. When Mad Jack talked politics, he used to swear loudly, challenging the audience by pointing his half finger at it. Apart from him, the other Attercliffe people found it difficult to express their political beliefs in a coherent and consistent fashion.

In fact, the relationship of equality that the steelworkers had with each other and with the state in the past had broken down and the local working class had fragmented into individuals with different and conflicting moral trajectories, political beliefs and personal experiences.

First, the fact of the local 'unemployment' clashed with the morality of 'independence' that characterised the community of manual workers. In the past, pubs were places where people displayed their independence and economic self-sufficiency, not where they betrayed mutual dependence and affection. The 'act of drinking' perfectly exemplifies the peculiar ostensive and co-operative nature of pub interactions. In fact, in pubs people don't drink together randomly; rather individuals gain status by 'buying' drinks for other people. The act of 'buying' drinks is a display of economic self-sufficiency, through which social connections are built. Even among our restricted circle, Brian would push the buying of drinks to the limits of his disposable budget, making us wonder whether his building business had finally made him rich. The ability to buy drinks doesn't rely on disposable cash or visible wealth, and indeed the owners don't increase their status when they generously offer the lads. Rather, it relies on the ability of making people think that your job is doing particularly well and that your wealth is going to increase, *in the long run.*

People with a personal history of stable jobs enjoyed more respect and social connections and they could easily manipulate the chain of exchange to their advantage. For instance, Teddy would reciprocate the drinks we bought him by including in our sphere of transactions at Khaled's the friends that he met at the 'King's Head' or at the 'Traveller', who were anxious to welcome him in their pubs. Thus, drinking together involved the building up of social relations by denying the economic nature of the exchange (in fact, cash circulated between the steward and the buyer, whereas the drinkers exchanged only beers) and was centred on the economic self-sufficiency of the members involved in the exchange. In fact, unlike the Workingmens Clubs and the Company Canteens where workers of the same company or of the same industry gather, pubs are rooted in the neighbourhood where customers are closely related socially but economically independent from each other.

Thus the economic interdependence of the customers of Khaled's undermined the very nature of pub drinking and the interplay between public display and intimate connections among its customers. In fact, when once I tried to buy a drink for Steve – my friend at Milly's – he replied that he couldn't accept because he knew that I was 'even more broke' than he was. Equally, between Teddy and myself, there was not much ground for reciprocal ostentation given that we met everyday at work and we knew of each other's poor professional life. The only customers who had a chance to increase their status at Khaled's were the contractors who, like Brian, would leave the neighbourhood for a few months for mysterious jobs 'abroad' and come back more tanned and wealthy than when they left. Thus, the independence that people were supposed to have in the eyes of the state and within the 'community' of ex-steel workers clashed with their awareness of their dependence on state benefits and on the help that they gave and received outside the gaze of the state.

Second, a public and shared notion of 'morality' clashed with the several illegal activities carried out by Khaled's customers. For instance, Khaled strongly condemned overt sexual behaviour among his customers and in order to prevent it, he confined women to a separate pool-room and expelled young Mary 'for life' for having breast-fed her baby in the snooker room. Nevertheless, sometimes one of the girls employed by Khaled at the Elisium brothel next to Morris, bumped into Margaret (Khaled's partner) near the counter, or Hamid – usually confined to the television room – met Teddy and Janice by the cigarette dispenser. In these cases, Teddy avoided speaking with Hamid of their encounters at the Elisium and Frida pretended not to have seen Khaled's young employee. Similarly, the drug deals organised in the committee room between Khaled, Tony's cousin and Terry the gardener, were an important part of the local economy but they also conflicted with Teddy's painful experience of the drug addiction of his son. When Tony's cousin ('The Lion') insisted on playing snooker with us, promising us disciplined behaviour and mesmerising shots, we all pretended not to have noticed the red dots of blood on his hands and his fixed glance on the wrong side of the snooker table.

Thirdly, the 'workers' and the 'owners' had a clearly different working ethos. The workers thought that the only ethical way of earning money was to actually 'produce'. They value manual labour highly, whereas the owners thought that business was made

of social connections and that the ability to create labour, not labour for the sake of it is what counts in life. Nevertheless, these apparently conflicting views were rooted in each other – given that Teddy and the other 'guys' *were* the owner's social connections, and the owners provided the guys with the only available labour. Thus, no matter what they really thought of each other, their snooker matches reinforced their mutual dependence and friendly interactions.

Finally, the Yemenis and the white lads were different 'kinds' of Attercliffe lads. In fact, if it's true that they were both victims of the decline of the steel industry, that they were both on the dole and on casual labour, that they both despised and encouraged prostitution, and condemned and consumed drugs, there were still some substantial differences that could not be dispelled but that were difficult to conceptualise. Might it be the pungent smell of 'their' curry, 'their' awkward ways of walking with shoes, the peculiar smell on 'their' long beards or their inexplicable immunity to the perils of 'white finger'. There was something that neither Teddy, nor Brian or Tony could explain. Yet, Yemenis were not allowed inside the Attercliffe Liberal Club and when Brian's daughter married 'one of them' he beat her for two days in a row.

In the pub the fragile social connections of the neighbourhood were retraced anew each time, and alliances, hierarchies and conflict re-enacted around the snooker table. For instance, Teddy's leadership of the group was visible in the crowd of people that gathered inside the room to watch his shots, in his theatrical way of bringing his cue inside a black leather case, like a gangster rifle case, and of distributing the coins among us to feed the timed neon light above the table. Outside the snooker room, Teddy's leadership manifested in the several parallel rounds of beer in which he was involved; in the packs of cigarettes, drugs and spirits that Khaled gave him 'under the counter' at the end of the evening, in his ability to negotiate good conditions with the entrepreneurs and of building economic alliances in the neighbourhood and in his firmness in keeping the discipline in our small group during the weekends. One of the rules that we never broke was the order with which we rounded the different pubs of Attercliffe: 9. 00 at the Attercliffe Liberal Club; 9.30 at 'The King's Head'; 10.00 at 'the Stallion'; 10.30 at 'the Traveller' and at 11 back to Khaled's for the last drink behind closed doors. Walking along Attercliffe Road, I released the tension I built up in the confined space of the snooker room, and I felt that our small group could finally move and talk more

freely until the next pub. On our way, we met groups of people like us – in light T-shirts and trainers – with whom we exchanged a few words without interrupting our progress to the next pub.

Thus, ethnic, gender, generational and personal conflicts and inconsistencies continuously emerged and were continuously repressed by the formal interactions of the pub and the fragmented beliefs, moralities and necessities of its customers were forcedly re-composed by the mutual dependence of the members of the community. Today, at Khaled's, people mix the equalitarian relationships that they had with each other in the past, with the unequal status and power of the local leaders or petty capitalists; the sense of morality that pervaded the relationship between elder workers and young apprentices, with the painful awareness of the drug addiction of the local lads and of their common involvement in the local drugs trade; their search for 'fun' and their desperate job-searches. As a result, the customers at Khaled's keep on performing the old social and economic functions, but with less conviction than in the past and always aware of the deep contradictions that divide the community. Thus, under the veil of mutual trust and co-operation, people judge, complain and criticise: 'How can Teddy 'have a laugh' when his daughter and grand-daughter are sitting on the table next to us, waiting for Khaled to give them the heroin that they will bring home?'; 'Why has Bettie offered twice, when she told me that she needed two weeks rent in advance because she was skint?'; 'Why is shot-hand Billy buttering up the scrap merchant, given that he has already agreed to help Tony at Morris?'

Conclusion

In this chapter, I have shown the strong interconnections in Attercliffe between formal and informal economic processes fostered by the new despotic capitalism that has emerged from flexible production. In fact, flexible production entails a polarisation and interdependence between capital-intensive and standardised economic processes of production and exchanges, on one level, and forms of hidden production, informal exchanges and mutual economic obligations at the level of the neighbourhood. Unlike the structure of urban economy highlighted by Hart with reference to Accra, where formal and informal economy remained separated, in Sheffield, the steel industry fostered the overlapping between these two sectors. In fact, due to its reproductive

qualities, the steel enters the production process as raw material and materialises into durable objects that are recycled in the melting shop at the end of their lives to restart a new cycle of production. As such, the steel produced in the formal market feeds a variety of markets (for scrap, tools, machines) and requires services (electricians, fitters, rollers, forgers) rooted in the informal economy of the neighbourhood.

Besides, I have shown that the actors, skills and social networks involved in the formal economy of the firms overlap with the actors, skills and social networks rooted in the informal economy of the neighbourhood. With regard to the actors, short-term unemployed and casual labourers constitute the core of the small steel factories of Attercliffe, as well as of the bigger steel corporations of the region, and their willingness to work as wage labourers depends on them having different unwaged works at the same time. In fact, without these informal jobs the wages they receive from formal employment wouldn't ensure their survival. Besides, the local labourers are able to use their skilled knowledge of ancient machines and their control over the production processes to shift between the production process that takes place within the firm and the production processes taking place in the neighbourhood. Finally, the social relations in the firm – as I have also shown in Chapter 4 – are embedded in the social relations and rules of behaviour of the neighbourhood. For instance, the independence and status enjoyed by the hot workers on the shopfloor, reflects their important social connections outside it, and the pricing of the firm's production follows their social position in the network of producers of Bessemer Road as well as long-term considerations of social risk avoidance[197].

I have also highlighted the redistributive effects of this interweaving of formal and informal economic processes on the lower strata of casual labourers, like the teenagers in Fowley Street. In fact, if the wage labour subcontracted by the big steel corporations leaves the contracted workforce in a state of continuous economic fluctuation, the chain of hidden production in Attercliffe is made stable by the social hierarchy that underpins the economy of the neighbourhood. Interestingly, short-term and casual labour is proving more durable and reliable than the labour of the wage workers employed in medium-sized firms, given that the small firms of Attercliffe are increasingly eroding

[197] This point has been made by Alexander and Alexander (1991) with regard to Javanese markets and by Stewart (1992) with regard to Gypsy horse markets in Hungary.

the profits of the latter and pushing some of them, like UNSOR, out of the market. Ultimately, the economic success of these small firms relies on the fact that they offer cheap and un-unionised labour, and on the local social capital that allows its cheap reproduction. Thus, if is true that flexible production increasingly polarises the structure of the labour market into a 'core' and 'periphery' of manual workers, it is also true that it redistributes wealth from the former to the latter, making casual labour more stable and wage labour more volatile.

In conclusion, in Attercliffe, as in Accra, the low level of wages and the high costs of living force the urban sub-proletariat into the informal economy. Thus, petty capitalism, in the building, coal and scrap sector; small-scale distribution – highlighted in the next chapter – of food, tools and durables; primary activities of fishing or gardening; such services as fitting, rolling, and electrical repairing and illegal ones such as prostitution and trade in drugs, tobacco and spirits are the informal economic strategies to which the Attercliffe sub-proletarians resort to reproduce their lives. But unlike the Ghanaian employment policy, at the time which Hart was writing, of low wages and high employment in the formal economy, the British state encourages the formation of a small labour aristocracy on the one hand, and a reserve of labourers willing to work for low wages and for short intervals of time, on the other.

Thus, the stigma generally attached by economists and by public economic planners to the informal economy – highlighted by Hart in his paper – only partially hides the fact that in post-industrial Sheffield the development of informal labour is the consequence of public policies of 'local social and economic regeneration'. As I have shown previously, these policies, are aimed at increasing 'social capital', that is, flexible forms of work and of labour reproduction that blur the boundaries between the firm and the neighbourhood and between the formal and the informal economy. There are two equally convincing reasons for a liberalist state to encourage interdependence between formal and informal economy. The first is that the informal labourers working in the formal economy become responsible for their own reproduction, thus releasing the state and the capitalists from their welfare obligations. The second reason is political. In fact, people who work whilst receiving state benefits or with double jobs are secluded from the rights, self-pride and ability of self-organisation that are enjoyed by the waged working class. Besides, the claustrophobic interactions between employers, workers and

self-employed at Khaled's demonstrate that the very distinction between capitalists and labourers has faded away in Attercliffe so that workers like Bob can be both at the same time. This physical and social proximity of capitalists and labourers in the Cliff, ultimately transforms the conflict between capital and labour into personalistic strategies of survival, built around the snooker table, by the counter or in the pub's Committee Room.

Some social scientists have optimistically expressed their faith in the regenerative capacity of 'trust' to counteract the effects of economic decline[198]. Indeed, 'trust-building' is becoming an increasingly important project in the context of British economic policies of de-industrialisation. In fact de-industrialisation, as I have highlighted in this chapter, is increasingly polarising the British industrial structure into big corporations and small-scale producers, while the medium-sized ones like UNSOR are driven out of business. The former rely on the casual labour, skills and old machines that characterise the economy of the latter. In turn, the economy of small producers, as I have shown for Attercliffe, is kept alive by the networks of trust and co-operation that allow their survival in the absence of stable wages. Thus, ultimately, the trust that sub-proletarians share in the neighbourhood, and their informal strategies of production and reproduction, allows the capitalists to make profits through flexible production and the state to withdraw from its concern with the social effects of de-industrialisation.

The trust and co-operation that develop from urban poverty, do not mean that social capital can compensate for economic capital, but rather that urban poverty forces people to blur these two kind of resources. In fact, the nature of trust and co-operation that develop in the slums of Attercliffe seems to differ from the friendly co-operation that develop in the bowling clubs described by Putnam in his latest book on social capital[199]. Interestingly, the social relations taking place at Khaled's, mirror the mixture of trust, hierarchy and distance through which the hot workers of Morris, who are among Khaled's long-standing customers, interact with each other on the shopfloor. This parallel suggests that the opening-up of economic institutions into the social texture of the neighbourhood, makes social relations both more personalised on the shopfloor and

[198] As Fukuyama (1995) and Putnam (1993) have argued.
[199] Putnam (2000).

more contractual in places like Khaled's, thus blurring the distinction between these two spaces. In fact, both on the Morris shopfloor, and at Khaled's, social relations mix economic interests with emotional attachment; individualism and co-operation; equality and hierarchy; and are full of contradictions and inner tensions. Like the friendship developed in the slums of Accra, the Cliff lads' mutual attachment is embedded in their everyday struggle for survival, and supported neither by the state nor by the nuclear family, but by working class institutions – extended families, apprenticed labour, informal labour markets – that existed before the state and the nuclear family came to regulate people's daily social interactions. Unlike the migrant labourers in Accra, who seemed to experience friendship as an emancipation from the heavy burdens of the family and from the control of the state, the Cliff lads experience 'trust' as a jump back into the past, when self-help and mutual co-operation were necessary for their survival. Besides, as Putzel (1997) has convincingly argued, mutual trust does not always lead to more desirable social systems. Rather, trust can become a form of collusion, foster illegality and force painful contradictions, as for the Cliff lads, where drugs are both traded and consumed within the same families. Trust can also reproduce inequality and exploitation, as a 'young lad', who starts his apprenticeship in the Attercliffe firms, knows all too well.

In conclusion, social capital scholars would claim that Attercliffe is a successful case of building-up of social capital, and that it provides the evidence that social co-operation fosters economic development and not the other way round. My evidence suggests that social capital and economic development are strictly interwoven[200], and that no social capital can develop in the absence of economic capital. In fact, the social co-operation of the Cliff lads doesn't rely on new social capital, but on old working class strategies of survival. Besides, the Cliff lad's re-enactment of the past in the present, involves painful contradictions, fragmentations and tensions within the community.

In his study on poverty in Britain, Peter Townsend dismisses the notion of 'objective' poverty' – measured by cash income – and proposes a notion of 'relative poverty' as 'withdrawal from participation in the customs and activities sanctioned by culture' (ibid: 57). This notion of poverty, Townsend claims, is even more salient in urban

[200] See also Harriss (2002).

contexts, where expectations about lifestyle are segmented in distinctive urban communities. Besides, Townsend suggests that standards of poverty based on income don't account for the public benefits, the social services, the household production, the gifts and personal support exchanged in the neighbourhood (ibid: 55). His claim well applies to Attercliffe, where individuals have disposable incomes close to the World Bank 'absolute poverty line'[201] but manage to live – in their words – a 'decent life' through their informal economic and social networks, illegal activities and state benefits. Nevertheless, the stubborn re-enactment by the 'Cliff lads' of their old 'working class' institutions with increasingly diminishing resources and inside increasingly segregated spaces doesn't seem to make their lives less 'objectively poor' as Townsend may suggest.

[201] 15% of the households of Attercliffe live with an average post-tax income of well below £ 4,000, whereas the 'typical household' lives with an average income of £ 17,000 and the richest ones with £ 41,500. According to the Health Authority, Sheffield ranks 25th most deprived out of 354 local authorities in England and, given its strong socio-economic polarisation between wealthy and poor areas, it can be safely claimed that Attercliffe is one of the most deprived areas in England. In fact, it not only matches P. Townsend's definitions of poverty as 'relative deprivation' (1979: 31) but it also meets the more precise standards of poverty set by the World Bank. The World Bank defines the 'Absolute Poverty Line' as 'disposable income per person of $US1 per day'. Thus an average Attercliffe household of three persons relying on a yearly income of £4,000 have a daily disposable income of £3.6 per person, that is, $US5 dollar per day.

Figure 59. A B&B by the arena.

Figure 60. Bessemer Road.

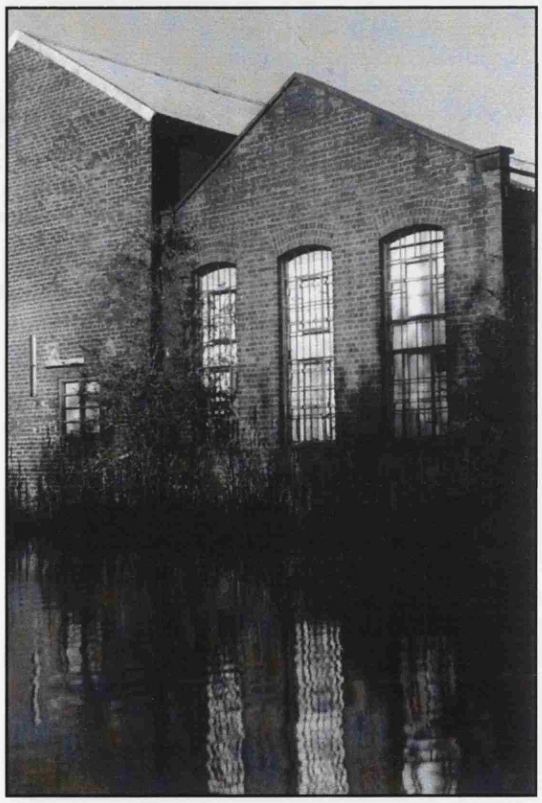


Figure 61. Back of the 'teenagers' forge'.

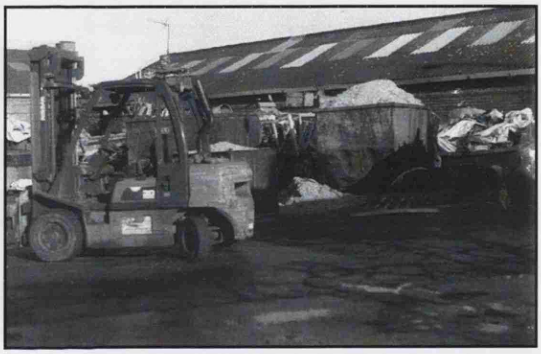


Figure 62. 'Stico and Co'.

Figure 63. Workshop by the river.

Figure 64. Workshop.

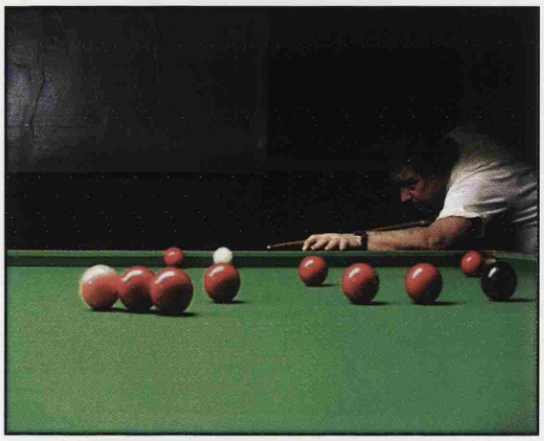


Figure 65. Teddy, the king of the snooker table.

Figure 66. Tony walks in the Rivelin valley.

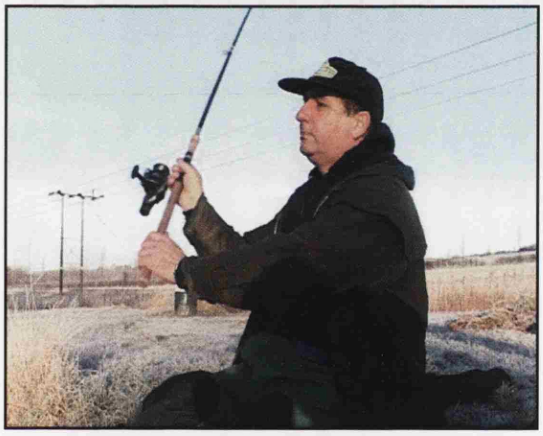


Figure 67. Alf at the Pinchmill pond.

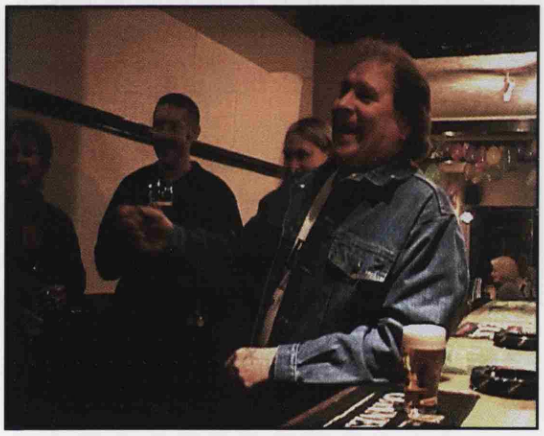


Figure 68. Teddy at The Traveller.

CHAPTER SIX:
WORKING CLASS FAMILIES

Introduction

This chapter shows the household structures and reproductive strategies of some workers of the two factories described in Part Two. The workers of Morris reproduce their labour through welfare benefits and the part-time informal incomes of the couple and in extended families and flexible residential arrangement that recall the reproductive strategies of the Attercliffe 'artisans' in the past. The workers of UNSOR reproduce their labour through male wage labour and in nuclear families and stable residences in working class suburbs that recall the reproductive strategies of the 'proletarians' in the past. Thus, this chapter shows the continuity between the past reproductive strategies of 'artisans' and 'proletarians', which I have described in Chapter 2, and their strategies today. The chapter also shows that flexible production increases the interdependence between the domestic spaces of these two working class formations. In fact these two household structures are located in two interdependent spaces of poverty both linked to the labour market of the steel industry. The Attercliffe families provide cheap, non-unionised and flexible labour to the small entrepreneurs of the area, whereas the working class families of the suburbs provide 'primary 'labour either in the female service sector, or in the male manufacturing one.

Recent research on 'social exclusion' in poor neighbourhoods in England[202] have kept these two groups separate, with the result that 'poor neighbourhoods' like Attercliffe and working class suburbs have been isolated from each other and from their macroeconomic context. By denying the interdependence between these two socio-economic spaces, poor neighbourhoods have been depicted as more socially fragmented than they are, whereas working class suburbs have been portrayed as more stable than they are. In Chapter 5, I discussed the connections between the formal and informal markets of the steel industry. In this chapter, I show the continuity between households that rely on long-term wage labour in the steel industry and households that rely on state benefits and informal labour in the local steel firms and will stress the fragility of the former in the absence of local social networks, and the resilience of the latter in spite of their lack of formal employment. My argument is that the formal labour market and the

[202] Lupton (2001); Mumford (2001); Bowman (2001).

informal one are closely related and that the nuclear families of the suburban working class adapt to the cyclical unemployment in the steel industry by moving to the Attercliffe slums, and transforming themselves into extended families.

A central focus of the chapter is the role played by state housing, welfare and economic policies in encouraging the fission and fusion of family members, kin and neighbours in the two areas analysed. Following Burawoy (1979; 1985), I look at the impact of state policies – with particular emphasis on housing, welfare and economic policies – on the steelworkers' strategies of reproduction. My hypothesis is that the state policies foster the formation of extended households and localised forms of self-help and social networks in Attercliffe[203], whereas they foster the formation of stable, conjugal families in the working class suburbs, and that the interdependence between these two domestic and economic spaces ensures the reproduction of both a waged workforce and of informal casual labour.

Bowman' s recent study (2001) on poor neighbourhoods in East Sheffield has highlighted the following 'statistical' characteristics of its families: (1) 43% of them consist of lone parents; (2) 65% of them are on welfare benefits (of these, 80% are lone parents); (3) 80% of them have 1 or 2 children under 18. The author concludes that 'this confirms wider studies showing that married couples are far less likely to be dependent on state benefits in the lower income band than lone parents' (ibid: 28). The evidence provided by Bowman and presented in the official statistics of the Sheffield City Council[204] – that the families of 'poor neighbourhoods' consist of lone parents and single young children living on welfare benefits – strongly contrasts with the evidence of my fieldwork in Attercliffe, where poor families consist of different generations of

[203] This point has also been made by Smith (1984) with reference to America.

[204] Attercliffe doesn't appear in the official statistics of Sheffield but it has been statistically broken down into the 5 wards that it once incorporated: Burngrave, Brightside, Manor, Tinsley and Darnall. *Unemployment* in these five wards is up to 30%, compared to the 4% of unemployment of the more affluent areas of Sheffield, this latter in line with the national average. Besides, 21.5% of their households are on *income support*, a third of the households receive some sort of state benefit (either income support, or disability benefit, or both) and half of them receive *housing benefit*. 35% of the households receiving income support comprise 'older persons only'; 31% comprise 'adults only' (aged 18-59); 24% comprise 'adults with children' and 10% of them are labelled as 'other households'. 25% of all *children* live in households with no earners (in Manor the percentage is 50%), but curiously only 12% of these non-earner parents receive income support for their children. The percentage of children who don't pass any GCSE is 25% in Manor, Burngrave and Brightside, and 18% in Darnall, compared with 3% of the pupils of the affluent neighbourhoods. Statistics about 'homelessness' are not available from the council. A social worker for a local centre for homeless children claims that 30% of the children of these areas have run away from home (source: 'Sheffield Trend').

related or unrelated persons living in the same house and pooling highly differentiated sources of income. Thus, the statistic reported by Bowman could also be interpreted differently. That is, that marriage breakdowns and lone parenthood are strategies to maximise the economic resources of the family and that they don't involve its dissolution, but rather its survival. For instance, in Attercliffe often couples deliberately don't marry in order to maximise their welfare benefits[205]. This doesn't mean that people who are not married necessarily live alone, but rather that 'marriage' is a contested category negotiated between the state and the neighbourhood and a localised economic strategy located in a continuum of social and domestic arrangements. Thus, in my ethnography of Attercliffe's families and kinship, I highlight the ideological nature of family arrangements and of cultural categories of domesticity. Rather than taking for granted the meanings of 'marriage', 'love' or 'motherhood', or of their absence, I will follow the process through which these meanings are negotiated between the state and the neighbourhood.

Families, homes and households.

On the last day of my fieldwork, I went to the city centre at 8 o'clock on a Sunday morning. Sheffield was completely deserted, with the exception of the dense gatherings of youngsters still chatting, dancing and smoking outside the city clubs. While I was walking, I saw a man standing rigidly near a small garden. The old man was supporting himself on a small branch of gorse that from the garden had expanded into the street. The body of the old man floated following the movements of the branch and displaying the sober elegance of the old fashioned clothes that covered it: black shoes, a tweed grey coat and brown gloves. I walked towards him and asked him if he was fine and he replied that he was not sure and that he was feeling dizzy. I helped him to sit down on the low wall of the garden and I asked him his name. He opened his eyes wide that, under the thick 1950s glasses, still looked like two small blue dots. 'I am not sure', he replied. 'Do you know where you live?' I asked him. 'I am not sure', he replied smiling with a slightly guilty smile. After a pause of reflection, he took out from his coat a small diary where he had written his name and address: William Tannengham, 22 Cecil Court, Broomhill. The diary was filled with notes of things to do every day, in case he forgot them: 'getting dressed', 'reading the book', 'cooking'. Still, the small diary looked quite empty and there were no names of persons that I could contact or mention to him, so that he could remember them. 'If he hasn't written names in it, I thought, it must mean that he has no friends or relatives or that he doesn't want to remember them'. I drove him back home and he invited me in.

The sun pierced the two long windows of the living room overlooking the hills of Bromhill and a small stream. Its light illuminated the small particles of dust floating all over the room and attracting my attention towards the objects on which it landed. The room was filled with books on the Railways. A black and white picture of four kids smiling at the camera and of their parents smiling behind them in a big mowed garden, dominated the room. Close to it, four coloured photographs of people wearing graduation hats followed each other in a row. The last picture displayed William Tannengham, with the same coat he was wearing on that day. By looking at the photographs, he recovered his memory and told me about his life. Now a retired pharmacist, he

[205] I will make this point clearer later in the chapter.

came to Sheffield from Glasgow 50 years ago to follow his wife 'because he loved her very much'. They had four children who graduated at Leeds and Nottingham Universities. The three daughters live in London, whereas Dave is a manager in a multinational company and lives 'a little bit everywhere'. Tannegham told me how much he loved trains and railways and re-evoked the bitter memory of when his father – an accountant – decided that he had to study medicine. When his wife died, he remained in Sheffield 'because my family is here' he said pointing to the black-and-white photos. When I asked him the names of his children, he replied 'I can't remember', and his memory blurred again.

After a few minutes silence, I noticed a yellow post-it with a name and a telephone number written on it. 'Who is Linda?' I asked him. 'Oh, yes, she is my daughter...and that's her telephone number' he suddenly remembered. I called the number and the daughter answered the phone. When I explained to her that William and I were in his living room, trying to sort out 'who he was' and 'what to do' she explained to me that William' is losing his memory'. In fact, 'for the last few months dad has kept walking in the city at night until he gets lost and someone brings him home. But he is very stubborn and won't give up his walks', she said. Linda thanked me and told me that we – William and I – were very lucky to live in Sheffield, because 'In London my father would have been left on the streets'. She said that she would call the carer immediately and that I should go home.

The carer came after 40 minutes, saying that on that morning she had come to William's home and since William hadn't answered the bell, had gone back home, from where she had called William's family. The carer looked quite dismayed by the whole situation and told me that the council paid her only for a 'half-a-day's care' and that she would prepare William's lunch and then go home. 'But you can't leave him like this', I remonstrated, ' he is going to go out again and again get lost!' William was looking at the sparkle of dust above his head while the carer and I argued. The carer prepared the lunch and before leaving, she suggested that William – or his family – should apply for a full time carer, because 'he is not able to stay alone anymore'. When the carer closed the door William was smiling at the reflections of sun that he was directing from his watch all across the ceiling of the room. 'You see, the difference between a person who needs full time care and a person who needs only half a day care – he said – is whether he is able to pee alone...and I don't like the idea of having people watching me while I am peeing'. He told me that he liked to walk for hours in the city until his memory faded and that often he didn't even come back home at night so that in the morning he wouldn't meet the carer and her watchful eyes. When he finished talking he was smiling at the reflections of his watch again, and I resolved to leave him alone. 'Bye William' I said closing the door. No answer followed.

The 'nuclear hardship' hypothesis

Having spent a year-and-a-half among working class families this experience was completely new to me. In Attercliffe I had never came across an old or ill person left alone by their children. Besides, I had never seen anybody refusing extra money and extra help from the council. Finally, I had never met a person alone who didn't cling to his memories to make sense of the present. Rethinking back to William's story several questions remained still unanswered. 'Why didn't he follow his children to London?', 'Why didn't they come to Sheffield to set up a new caring scheme?', 'Why did he say that this home was his family, given that he spent his days walking in the streets?', 'Was his amnesia entirely genuine, or was it partly strategic?'.

Most of all, Tenningham's story reminded me of Peter Laslett's intriguing 'nuclear hardship hypothesis' (1988). In his analysis of pre-industrial household structures, Laslett claims that the structure of a household can be deduced by answering the following question: 'in case of necessity, from whom would I seek help, if I couldn't rely on my spouse or on my children?' When the help is given through transfers from the 'community'– in form of poor relief subsidised by taxes – we will find nuclear families, whereas when help is given by the kin, extended families are more likely to be found. In his 'history of ageing' (1977), Laslett extends his hypothesis to elderly persons to demonstrate that in nuclear family systems elderly persons without a spouse remain in 'lone households' and survive on state relief, rather than joining their children's families. On the contrary, in extended families, parents join their children's families on the death of their spouses. Yet, Laslett's hypothesis doesn't account for the different strategies that people in need of help follow in order to strike the right balance between survival and independence. In fact, Tannengham didn't want to be helped by a carer and didn't want to move to London because his family was 'in his home', embodied in the photographs that brought his memory back. On the contrary, Teddy and Freda live in 'the same home' as their children and grandsons while at the same time receiving state benefits as 'lone persons'.

In my study of Attercliffe families and households, I reverse Laslett's order of causality and claim that household structures and family ideologies [206] are the result of state welfare, housing and economic policies, rather than their cause. More precisely, confirming a conspicuous body of evidence gathered by American scholars in their studies of urban working class families (Stacey 1990; Kessler-Harris and Brodkin Sacks 1987; Stack 1974), I suggest that extended families are adaptive responses to the deregulation of the labour market and to the privatisation of state welfare and housing provisions.

In Chapter 2, I showed that in Attercliffe during the 19th century the state policy of poor relief split the working class into two household formations: the nuclear households of the 'respectable working classes' and the extended households organised into working groups of the artisans, the former employed by the steel capitalists and the latter by the

[206] Collier at al. (1992) have analysed the role of the state in crafting family ideologies.

small-scale steel producers or self-employed[207]. In this chapter I show that this polarisation of the working class into two household structures and ideologies of the family is still present in Attercliffe and that side by side with the nuclear families of the unionised, male, industrial breadwinners and of their wives employed in the service sector[208] an underclass of daily labourers, like the American urban underclass of Silicon Valley, have 'never secured their patriarchal domestic privilege' (Stacey, 1990: 225) and adapt to poverty through flexible household structures, provisional domestic arrangements and fluid spaces of intimacy.

In this light, the stereotype perpetuated by the official statistics on modern families as split between stable conjugal and nuclear households and the broken households of atomised lone parents, is flawed. In fact, most of the 'modern families' of Attercliffe 'draw on traditional pre-modern kinship resources, lurching back and forward into the post-modern family' (Stacey, ibid: 252). In what follows, I show that welfare, housing and economic state policies had the effect of discouraging the formation of stable conjugal families in Attercliffe. Stack, in her study of working class families, claims that the state discourages stable marriages because they are incompatible with the flexible labour market and the level of unemployment required by a post-industrial economy. Here, I slightly modify this claim to show that the state and the post-industrial capitalists still rely on ancient forms of working class fragmentation between the stable and small conjugal families and productive spaces of the proletarians, and the loose and extended families and productive spaces of the artisans.

Welfare benefits

The Department for Social Security (DSS) encourages 'independence' and the centrifugal dispersion of the members of the family into different nuclear households. In fact, as a general rule, 'single people' are given more benefits than 'couples'. Similarly,

[207] Hart (1992) makes the link between household structure and political economy convincingly clear.
[208] The role of the rising female employment cannot be underestimated in analysing the households and families of Attercliffe. In fact, the Statistics of the Sheffield Employment Department show that 60% of women in Sheffield of working age are in paid work and that 78% of them have jobs in service. Nevertheless, I subscribe to J. Smith's claim that the 'nature of the service economy – high labour intensity; high turnover, part-time work and lower wages – is based on stereotype of female workforce still dependent on men' (1984: 310) and therefore it has reinvigorated previous forms of domestic ideologies.

Most of all, Tenningham's story reminded me of Peter Laslett's intriguing 'nuclear hardship hypothesis' (1988). In his analysis of pre-industrial household structures, Laslett claims that the structure of a household can be deduced by answering the following question: 'in case of necessity, from whom would I seek help, if I couldn't rely on my spouse or on my children?' When the help is given through transfers from the 'community'– in form of poor relief subsidised by taxes – we will find nuclear families, whereas when help is given by the kin, extended families are more likely to be found. In his 'history of ageing' (1977), Laslett extends his hypothesis to elderly persons to demonstrate that in nuclear family systems elderly persons without a spouse remain in 'lone households' and survive on state relief, rather than joining their children's families. On the contrary, in extended families, parents join their children's families on the death of their spouses. Yet, Laslett's hypothesis doesn't account for the different strategies that people in need of help follow in order to strike the right balance between survival and independence. In fact, Tannengham didn't want to be helped by a carer and didn't want to move to London because his family was 'in his home', embodied in the photographs that brought his memory back. On the contrary, Teddy and Freda live in 'the same home' as their children and grandsons while at the same time receiving state benefits as 'lone persons'.

In my study of Attercliffe families and households, I reverse Laslett's order of causality and claim that household structures and family ideologies [206] are the result of state welfare, housing and economic policies, rather than their cause. More precisely, confirming a conspicuous body of evidence gathered by American scholars in their studies of urban working class families (Stacey 1990; Kessler-Harris and Brodkin Sacks 1987; Stack 1974), I suggest that extended families are adaptive responses to the deregulation of the labour market and to the privatisation of state welfare and housing provisions.

In Chapter 2, I showed that in Attercliffe during the 19th century the state policy of poor relief split the working class into two household formations: the nuclear households of the 'respectable working classes' and the extended households organised into working groups of the artisans, the former employed by the steel capitalists and the latter by the

[206] Collier at al. (1992) have analysed the role of the state in crafting family ideologies.

small-scale steel producers or self-employed[207]. In this chapter I show that this polarisation of the working class into two household structures and ideologies of the family is still present in Attercliffe and that side by side with the nuclear families of the unionised, male, industrial breadwinners and of their wives employed in the service sector[208] an underclass of daily labourers, like the American urban underclass of Silicon Valley, have 'never secured their patriarchal domestic privilege' (Stacey, 1990: 225) and adapt to poverty through flexible household structures, provisional domestic arrangements and fluid spaces of intimacy.

In this light, the stereotype perpetuated by the official statistics on modern families as split between stable conjugal and nuclear households and the broken households of atomised lone parents, is flawed. In fact, most of the 'modern families' of Attercliffe 'draw on traditional pre-modern kinship resources, lurching back and forward into the post-modern family' (Stacey, ibid: 252). In what follows, I show that welfare, housing and economic state policies had the effect of discouraging the formation of stable conjugal families in Attercliffe. Stack, in her study of working class families in the Chicago 'Flats', claims that the state discourages stable marriages because they are incompatible with the flexible labour market and the level of unemployment required by a post-industrial economy. Here, I slightly modify this claim to show that the state and the post-industrial capitalists still rely on ancient forms of working class fragmentation between the stable and small conjugal families and productive spaces of the proletarians, and the loose and extended families and productive spaces of the artisans.

Welfare benefits

The Department for Social Security (DSS) encourages 'independence' and the centrifugal dispersion of the members of the family into different nuclear households. In fact, as a general rule, 'single people' are given more benefits than 'couples'. Similarly,

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children between 16 and 18 living at home receive half of the amount of the benefits that they would receive as independent children. For instance, Teddy and Freda receive £51.40 in income support weekly per person because they have declared themselves as a 'non couple'. Had they claimed to be 'a couple', or had they been married, they would have got a joint income of £80, with a net loss of £1900 per year. Similarly Mark, the sixteen-year-old forger of Bowden Forge, receives £40 every week in income benefits. Had he declared that he was living with his parents, they would have received a Child allowance of only £25.90 per week – a net loss of £1,000 per year. Thus a couple with children can make more than £3,000 per year by declaring that they are all independent from each other. For each independent child, the family as a whole gains £1,000 per year. Finally, married people on income support have their benefits reduced when they work, whereas non-married couples can add their incomes to the benefit cheque and this encourages independence over marriage.

Nevertheless, this independence is hard to achieve, given that welfare benefits provide little more than £5,000 yearly for every sick or unemployed individual so that people helped by the state are still struggling below the poverty line and people on benefits still need help from their families. As a consequence, people on state benefit can hardly set up an independent household in Attercliffe. In fact, even if the state pays the rent of the home, the fixed expenses required to run it effectively (gas, electricity, water) and the expenses required to take care of children and ill members of the family when its head is working (which he/she shouldn't do) are still prohibitive. These needs for extra care and for spreading the fixed costs of living among several members, 'pull' the family back together.

This fact creates a contrast between the centrifugal movements of the members of the families in their pursuit of independence and their centripetal regrouping into the same 'home' when they seek help from their relatives. In fact, 'independence' is a highly appreciated value among working class families, but it is incompatible with poverty. This latter requires reconnections and pooling of resources and people under the same roof and flexible household arrangements to contain the differentiated and cyclical needs of its members. In fact, in Attercliffe, people live independently only for short periods of their life and they periodically re-join their parents' homes when they need help.

In Attercliffe, 25% of the children don't have GSCEs and the majority of them leave school early to work. Nevertheless, they rarely move away from the parental home because neither they nor their parents can afford to live independently. Thus, even if children between 16 and 18 are given income support if they decide to live in independent households, they rarely do so, since they cannot afford the costs of independent housing. The teenage forgers in Fowley Road, declare themselves independent from their families, but still live with them. This helps to explain the statistical 'fact' that '25% of dependent children live in households with non-earners parents' and only '12% of these claim Child Allowance'. Why don't these parents accept the extra allowance of £ 26 per week? And how do these children survive? The obvious answer is that 13% of the children live with their parents, but are not dependent on them, because they work.

The second cycle of dependence on the family comes when people have children, or some illness, or when they become long-term unemployed. In these instances, as I will show in this chapter, the high cost of housing pools groups of households of unrelated adults together, forces adult sons and daughters back to their parental homes, often with their children and partners, and fosters flexible sleeping arrangements between kin or friends in the neighbourhood. Some of these families – consisting of different nuclear families of related or unrelated people – group together into permanent extended families, whose stable core lives in the same 'home' in spite of the cyclical fission of some of its members.

The third pattern of dependence is linked to ageing people. For instance, Tony, from Morris, lives with his mum because her dementia is progressively worsening and big Dave from Morris, lives with his mum because 'she is old' (and because when he is drunk, the way to his mum's is 'the only way he remembers'). The reason why these people don't ask for a carer for their parents is that carers could easily find out that Tony is moonlighting and big Dave working whilst on the dole and that, more generally, 'you would never put your mum into the hands of the social'.

Housing Policy

The privatisation of the Sheffield council estates and the decentralisation of the council housing and social policies into 'area specific' regeneration plans have increased the isolation of Attercliffe from the rest of the city. In fact, as a result of the compulsory relocation of the local families, the demolition of their houses and the development of the motorway cutting across its historical borders, Attercliffe has become a 'border area' suspended between the industrial spaces of the steelworks and the post-industrial architectures of the leisure economy, where the only buildings that have resisted demolition are its pubs and boarded up Victorian terraced houses.

Nevertheless, the demolition of the back-to-back houses of Attercliffe by the planners, didn't prevent the local people from living in the neighbourhood; rather it prevented them from living in it in a stable fashion. In fact, the DSS provides Housing Benefits to 'persons who live in pubs, hostels, B&Bs or guesthouses'. These shelters allow independence at affordable costs, in that their customers can share the fixed costs of living and support each other in their needs for drugs, small loans and company. Given the huge number of pubs located in Attercliffe, this option is the most practised by the 'Cliff people'. In fact, the more than 50 local pubs have turned into stable households where kin or groups of unrelated adults with or without children rent rooms and live for prolonged periods of time, often for several years. Besides, runaway children and migrants sleep in the row of boarded up houses in Attercliffe Road that are empty during the day and lived in by night, when they come back from travelling around the city. Finally, derelict dwellings have been transformed into B&Bs where local people who work as contractors in the region – or in London – during the week, live during the weekend to re-connect with their friends and families.

Economic Policy

The council tolerates those unsafe and unstable forms of accommodation because it is functional in relation to the state economic policy of privatisation and of deregulation of

the labour market. In fact, as I have shown in Chapter 5, 'Objective One' – the legal framework that regulates the funding from the central government of projects of economic and social regeneration in South Yorkshire – channels funds into the small firms of Attercliffe and ultimately fosters the increase in the demand for casual labour vis-à-vis wage labour. In Chapter 5, I have also shown that the reproduction of casual labour is only partially ensured by industrial wages, and that rather it depends on localised and diversified exchanges and activities of production. Because the survival of the Attercliffe labourers depends on their ability to diversify their sources of income and their activities of production in the neighbourhood, rather than finding a fixed paid employment outside it, the economic life of Attercliffe is embedded in the social life of the neighbourhood: jobs are allocated in the local pubs, production is shared in the local yards and incomes distributed within local households. Thus, from the point of view of the state and of the steel capitalists, temporary, cheap and flexible accommodation and social aggregations in pub rooms and derelict buildings ensure the reproduction of a highly flexible and cheap labour force for the steel industry. From the point of view of the Attercliffe people, such temporary accommodation allows them to live close to their families but independently from them and to maintain their economic connections with the neighbourhood in a situation of maximum freedom. In fact, flexible family arrangements and blurred boundaries between residences and domestic organisation and between kinship and friendship (Stack, ibid: 54) facilitate the transfers of resources and labour between the domestic spaces and the spaces of production, and reconcile economic maximising with social risk avoidance. Morris is an example of one of such flexible adjustment between the life on the shopfloor and the life of the neighbourhood.

These different strategies through which the local people negotiate between independence and help, explain the statistical 'fact' that 60% of houses in 'poor neighbourhoods' are empty. In fact, the main reason for these empty council houses in poor neighbourhoods is that people cannot afford to live in them 'decently' and therefore group in the parental home. As I have shown in Chapter 2, migration to the parental households in time of economic busts was a common strategy in the mid 19th

century in Attercliffe. Today, even people with stable jobs, cannot fully afford the costs of their homes[209].

The second reason for the empty houses in 'poor neighbourhoods' is that people live in their 'homes' only temporarily, either because they are contractors working 'abroad' or because they are 'lone persons' who move into different areas of the city, looking for provisional jobs and social connections.

Thus, empty homes show the two faces of poor neighbourhoods: the extreme independence of the young children and of the contractors who escape from their homes and the extreme dependence of the 'lone persons' who group into the same parental home.

Many studies on English kinship conflate the notion of 'family' with the 'conjugal family' and 'the household'[210]. These studies have generated three kinds of conclusions about the nature of English kinship in urban life. M. Young (1954) suggests that industrialisation increases the need for 'extended families' in working class neighbourhoods and that 'in the working class families of East Borough in London, and probably in all the working class families of industrial countries, different generations of kin cluster either in the same neighbourhood or in the same home so that they do in effect constitute one domestic unit similar to the Bemba matrilinear extended family'. Young and Wilmott (1971; 1975), writing twenty years later, claim that industrial life in fact reduces the importance of the extended family as the base of intra-household support, due to the physical separation of its members in modern cities. Finally Firth, in his studies on English kinship (Firth, 1956; 1964 and Firth et al., 1969) suggests that urban life still involves strong interdependence between the conjugal family and its kin and that this is true both of middle class families and of the South Borough working class families.

Besides, anthropological studies on Western kinship tend to replicate the folk assumption, highlighted by Schneider (1980), that urban life encourages the formation

[209] For instance, when Alf invited me to his home after work, we would sit on the sofa in total darkness and freezing cold, given his need save on heating and electricity costs.
[210] A similar point is made by Wilson and Pahl (1988).

of independent households whose members are related by 'law or marriage', rather than by 'blood', and also the assumption that people unrelated 'by blood' and 'by law' can't be members of the same family or that they can't relate to each other 'as if they were a family'[211].

Both Strathern and Edwards have stressed that English ideas of kinship don't overlap with the conjugal or with the extended family but are the outcome of hybrid networks' of interrelatedness. For instance, Edwards describes 'neighbouring' as an active process through which families redefine their boundaries along the lines of 'blood' and 'residence' (2000: 195), and Strathern suggests that the two 'facts of English kinship' – its 'individuality' and 'diversity' – are due to the peculiar Western emphasis on the parent-child relation (1992: 10- 46). Strathern and Edwards (2000) conclude that folk definitions of 'kinship' are a hybrid patchwork of 'blood' and 'law' that people sew together in the course of their life.

Indeed my ethnography doesn't show either 'the fact' of spatial separation between children and their parental home, or that 'children are their parents' future' (Strathern, 1992: 15). Rather, parents are often the only viable future for their children and 'homes' are blurred social spaces whose internal social connections flexibly shift between the 'inside' and the 'outside'. Nevertheless, Strathern's idea of the fluidity of the boundaries between 'family' and 'community' can be usefully applied to my ethnography. In fact, in Attercliffe, not only are stable couples – like Teddy and Freda – not married or formally registered as 'couples', but also there are several instances of families of 'unrelated people' whose members live in the same home for long periods of their life.

The evidence of my fieldwork suggests that in a poor urban context, it is difficult to make a distinction between the 'conjugal family' and the 'extended family' given that individuals flexibly rely on and shift between the two spaces and kinds of resources. In fact, distinctions between parents and kin, and between kin and friends are difficult to draw in some Attercliffe households. Similarly, the obligation of 'motherhood' and 'fatherhood' – child-rearing, the provision of food and shelter, education – are extended

[211] Stafford (2000) interestingly stresses the continuity between 'reciprocity' in the patrilinear family (*yang*) and reciprocity (*laywang*) in the neighbourhood.

to kin and friends and often perceived as collective obligations, rather than obligations pertaining to specific individuals. The notions of 'love', 'divorce' and 'conjugal stability' lose their highly moral connotations in the context of poverty. For instance, divorces are perceived as additional kinship resources rather than ruptures, and disappearances of household partners are promptly filled with temporary partners, friends or additional kin. Similarly, 'love' often coexists with domestic violence, betrayal and economic conflicts between the partners, and conjugal stability is frustrated by long migrations in search of work.

Instead of explaining the fluidity of the household borders and of modern notions of kinship by invoking Strathern's 'folk psychology', I suggest that Attercliffe's 'fluidity' is the mixed outcome of state ideology and structural economy. In fact, the DSS' policy of giving additional benefits to 'lone persons', combined with the increase of contracted labour due to flexible production, pushes people to seek independence from the conjugal family, or to deny its existence. On the other hand, the impossibility of fully relying on state benefit to set up independent households, pushes individuals back into the ideology of the family. My point is only tangentially similar to Parsons' (1969) claim that the nuclear households are functionally adaptive to the demands of industrial society. In fact, if I focus on the link between political economy and household structures, I equally stress the ideological nature of industrial society and its reliance on fragmented and contradictory working class formations[212].

In what follows, I will describe three different household structures and forms of domestic arrangements linked to two different social formations. In the first section, related to Attercliffe, I present one instance of a stable household of unrelated individuals and one instance of a complex arrangement of kinship, friendship and marriage in the same domestic space. I will develop further this third case to show the continuity between flexible household arrangements and flexible and differentiated reproductive strategies, with specific reference to patterns of family consumption of essential goods and of leisure time. In the second section, I will describe the household structure of a family of wage labourers living in a typical working class estate. At the

[212] From this point of view, Collier, Rosaldo and Yanagisako's (1992) critique to functionalist theories of kinship in favour of a structural analysis of kinship ideologies, misses the point. In fact, the two approaches are not incompatible as the essay of Kessler – Harriss and Brodkin (1987) demonstrates.

end of the chapter, I show the case of a family which returned to Attercliffe from the working class suburbs.

The Attercliffe families

CASE ONE: Milly's 'Black Sparrow'

Milly's 'Black Sparrow' is a boarded up pub whose back-garden wall runs along the fences of the Sheffield Arena, built in 1991 as one of the sites for the World Student Games on the space left empty by the demolition of the Brown Bayleys steelworks. Walking along Attercliffe Road, it is impossible to miss the Black Sparrow and not to ponder on the contrast between its small Victorian façade and the massive circular steel walls of the arena a few metres behind it. Today the arena is mainly rented out to non-professional football teams or used for public entertainment: live concerts, mass preaching and the 'Erotica Festival', that energises the neighbourhood every July. When the 'Beer Act' (1989) allowed mergers between big breweries, small pub owners like Milly and her husband were put out of the market. Today, a scrap dealer owns the Black Sparrow and lets it to Milly. When her husband died, Milly transformed it into a B & B and started to sub-let its rooms to a core of fixed tenants – old friends and ex-customers of the Black Sparrow pub – and to a variety of young immigrants and runaways who pay their £20 weekly rent and disappear after a while.

The house is constantly darkened by the boards on its windows and the big main room still reveals its ancient features: the long counter, the dart room, the male toilets with a long row of wall urinals, and the snooker room, now turned into 'Room number 3'. A long spiral roll coated with sugar floats over the room showing the several flies that got stuck on it during the year. Milly lives in the attic of the building; Jim, shot-hand Billy and Terry 'the gardener' live on the first floor and Hamed and Georgy on the second floor. On the ground floor, Steve occupies 'Room number 3' and the main room – where once the pub Committee met – is filled with photographs of Milly's son, who was stabbed to death by a Rastafarian in Spital Hill. The division of labour in the Black Sparrow follows rules that have been consolidated over the last 7 years of cohabitation by its tenants. Steve repairs the electrical and mechanical appliances; 'shot hand' Billy buys cigarettes and drugs from Khaled's and deals with Bill's 'swap-shop' for the

supplies of stolen durables, pieces of furniture and clothes. Jim walks and feeds Bob (Milly's dog) and supplies the home with the fish that he catches in the Don. Terry the gardener cultivates his powerful connections with the dole office, thanks to his diplomatic *savoir faire* and his deep knowledge of the intricacies of the DSS bureaucratic rules, due to his permanent disability. Milly prepares breakfast in the morning – which she distributes on the four small tables of the main room; she washes and irons the clothes and cleans the toilet. 'The cleaning of the individual rooms and of the other common areas are not included in the price', Milly claims in an authoritative voice when a new lodger arrives and in fact, the house is never cleaned and it stinks of Bob's hairs and saliva.

Apart from Terry the gardener who is well off due to his permanent disability allowance, the other members of the household are casual labourers who spend their time between the local steelworks or scrapyards, the dole office and the several pubs of the area, where they start drinking early in the morning. The relationships inside the household vary between indifference, competition and almost sincere friendship. They are skilfully managed by Milly, who in spite of her 72 years, smoothes conflicts, jealousies and small acts of violence with vigorous screams that frighten even old Bob. During my residence at Milly's, the main source of conflict was Georgy, a Polish immigrant whose strong body and stiff posture mesmerised old Milly and left the male group of the household unconfident. According to Billy, Georgy was dealing crack with the Rastafarians of Spital Hill, this fact being highly regrettable in Attercliffe, where the local Yemeni bosses and the old 'Cliff lads' control the heroin business. This is the reason why, Billy told me, 'we don't like him', and not, Billy assured me, because old Milly irons only his clothes and 'posh' shirts. Shot hand Billy and I spent several mornings at Khaled's, where he told me of his variegated life that really only started when he ran away from his dad, on one of these days when he showed Billy his fist again. When he was 11 years old, Billy was shot in his hand by a heroin dealer from whom he had stolen some money and since then Billy has been working as casual labourer. He returned to his parental home only 10 years ago, when his father died, but because 'mum didn't approve of my habits', Billy moved to Milly's – though now it is she who complains about Billy's bad habits. When he is not working or at the dole office, Billy walks along the canal up to Rotherham, stopping at every pub he passes on his way.

Apart from the fact that Steve stole, Billy was constantly drunk, and Georgy terrified the household with his cold stare, there were some moments of gaiety in the house, like during the Tina Turner concert at the arena. The only member of the household who did not to enjoy the shaking of objects, walls and glasses due to the penetrating music, was old Bob, who – on Prozac for the past few months due to his incompatibility with modern music – died of heart attack.

After seven years of cohabitation, the Black Sparrow tenants have got used to each other and have developed common routines, conversations and shared views of society and of its radical changes since the decline of the steel industry. When I asked them whether they felt they were 'like a family' I had conflicting answers. 'Shot hand' told me that 'he likes independence' and that the fact that Betty is becoming like a second mother to him will, in the long run, force him to leave. Terry the gardener said that 'in legal terms we might as well be a family'; and Steve – wrapped in his navy jacket and fisherman's hat – told me that 'we need to be friendly with each other, otherwise, we would kill each other'. When I returned to Milly after my fieldwork, old Bob had been replaced with a new dobermann and Georgy had left the home without paying the last week's rent, leaving the household split between despair and relief.

CASE TWO: Teddy and Freda

Teddy is 58 and lives in Attercliffe and works in the hot department of Morris. Teddy divorced five years ago, when Freda, his 'partner', moved in. Teddy and Freda met at 'Firth Brown where Teddy was first forger and Freda worked at a milling machine. Freda stopped working as miller when she discovered she had breast cancer. She is now stewardess at the Attercliffe Liberal Club on Saturday nights only, when women are admitted in the club, and works part-time at the milling machine of a local firm when Teddy's income shrinks and the family face serious financial hardship. Teddy's daughter and son live with Teddy and Freda, together with their partners and children. They bring into the household money from their welfare cheque and the odd incomes deriving from part-time jobs. Teddy's son (Fred) is house-bound due to his heroin addiction and has recently became a problem for the rest of the family especially when Teddy is not there to provide discipline and heroin when the fits of addiction reach their peak. During Fred's worst times and when Freda works, the four grandchildren of the

house are scattered between different houses in the neighbourhood – at Freda's sister's, at Tony or Brian's home or at Teddy's cousin's 'Traveller Pub'– where they stay until Fred gets better.

Teddy confesses his difficulty in educating Bill, his grandson, who is said to be involved in Khaled's drug deals. Luckily, Bill strongly admires Brian, Teddy's best friend, for his bohemian life as a contractor that takes him to different towns and countries; provides him with different homes – his small flat above the Britannia pub and the prefabricated houses on the worksites – and bonds him with the different women and friends that he meets on his way. As a consequence of their friendship, Brian allows Bill to stay at his flat above the Britannia pub when he is out of town and this accommodation pleases Teddy and Freda because it makes more room available at their home but at the same time allows them to keep an eye on Bill, given the proximity of their residence to the Britannia pub. Nevertheless, Teddy has developed a close relation with his granddaughter, Molly, who is 17 years old and accompanies Teddy to the pub every weekend. Molly is the star of Attercliffe not only because she is tall, blond and very attractive, but also because she manages to fend off the gentle harassment of Teddy's male friends with naturalness and decision, punching and swearing at the slightest sign of disrespect.

Clare (Teddy's daughter)'s children are both very young and she is very protective about their education. Clare moves into Teddy and Freda's home only when her husband is 'out of town' working as a contractor near Scunthorpe where he also lives during week days. Clare lives on the top floor of the terraced house and, according to Freda, she avoids daily interactions with the rest of the family, but still expects 'hot meals on the table and clean sheets in her bed'. Clare's accommodation at Teddy and Freda's is only temporary because it is primarily related to the young age of their children and to the casual labour of Jack (Clare's husband), whereas Fred and Lisa stay in their parents' home. Her children's periodic movements between different homes in Attercliffe seem to have consolidated into a stable arrangement.

Teddy's house is a two-bedroom terraced-house with a small garden – that he leaves uncultivated – and a parking space for his 1950s 'Highlander' caravan. Teddy and Jack – a fitter friend of his – have set the caravan up with an *en suite* shower and a small

heater that are powered by a big generator when the family can afford an increase in the electricity bill. Thus in good times, the caravan provides two extra beds for the family. Teddy and Freda say they love each other and that they only fight when there is 'no money in the pot' – even though Teddy keeps on drinking, betting and playing snooker. When Freda and Teddy are going through a bad patch, Teddy moves to his cousin's 'Traveller' pub, where several rooms above the pub are available for family members and friends. Clare often sleeps there too, especially during the holidays when the pub is crowded and extra help is needed. Teddy doesn't have hobbies – gardening, DIY or interior decorating – and during the weekends runs away from home as soon as he wakes up, only to show up again late in the evening. Teddy tells me that this is because 'in the house there is not enough space for everyone'. According to Freda, it is because 'Teddy doesn't have any sense of home'.

Consumption and leisure in Attercliffe.

One of the basic assumptions of economists is that modern industries buy labour and sell their products in integrated markets. Markets are said to be integrated when their commodities are sold at standard prices, that is, at prices that reflect the transactions made by buyers and sellers in the whole economic system. The second characteristic of integrated markets is that its subjects are aware of the optimal prices fixed for a specific good and that this common awareness makes their transactions easy.

In Sheffield, the typical integrated market is the Meadowhall shopping mall, where multinational retail companies, such as Marks & Spencer, Nike and Adidas sell their goods at a price that is the same all over the world. In this section, I want to show how the local economy of Attercliffe faces this global challenge and carves small 'local' economic niches where goods are produced and exchanged outside the 'integrated market'. My suggestion is that 'global' markets exist side-by-side with marginal markets where the poorest strata of the population produce and exchange the same goods sold in the formal market but following different 'styles' of negotiation, agreeing on different prices and with different goals in mind.

In 1887, the Sheffield municipal council notified the Duke of Norfolk of 'the request to the Royal Commissioner to extend the municipal market rights and tolls....as Sheffield

is the only town of more than 100,000 inhabitants whose markets remain in the hands of a private owner or Lord of the Manor'. The rights to the tolls and stall rents of the Fitzalan market, the Norfolk market, the Castle Market, the Sheaf market, the Corn exchange, the Smithfield market, the fish market and the slaughter houses had been given to the Duke of Norfolk by Edward I in 1296. The council's offer of £267,000 for the acquisition of the market rights was turned down by the Duke and the council resorted to a Parliamentary Bill for the compulsory purchase of the Duke's land. The Bill was rejected several times until 1899 when the council purchased the right to the markets.

The fact that in Sheffield an integrated food market developed only at the turn of the century contrasts with the intensive industrialisation of Sheffield and the unified patterns of consumption that industrialisation entailed, according to the economic historian Sidney Pollard. Besides, the concentration in Attercliffe of both the meat market and of the fish market reflects the economic self-sufficiency of its inhabitants whose diet consisted in fish from the river Don and pigs and vegetables from their gardens[213]. This fact suggests that the control of the small producers over the cutlery industry, also allowed them to control the consumption of meat – whose slaughtering required very sophisticated tools and forms of labour organisation[214], fish – whose rights they still rented from the Duke of Norfolk – and vegetables.

The slow amalgamation of the local markets into the town market was paralleled by the foundation, in 1867, of the 'Brightside and Carbrook Co-operative Society' by the workers of the tool firm 'Wm. Jessop & Sons Ltd.'. The Co-op was erected in Carbrook Street, Attercliffe, on the foundations of the old Sheffield Castle. At the turn of the century the Co-op had a membership of 12,000, an annual turnover of £300,000 and a range of shops and services which included pubs, abattoirs, dairy, bakery, cloth shops, loans for house building and a library run by the Co-op Education Secretary. In 1964, the Co-op was relocated to the actual 'Castle House', erected by the council. Today, the council owns the space and rents its stalls to food and clothes vendors, blacksmiths, shoe repairers, Asian hairdressers and home cleaning products merchants.

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[213] Leader (1875)

[214] C. Babbage's seminal book on scientific organisation of labour (1820) is entirely based on the organisation of British slaughterhouses. Interestingly, F. W. Taylor applied his scientific model to the 'Bethlehem Steel Co' in Philadelphia.

Located between the town centre and Attercliffe, Castle House is easily accesible to the Caribbean community from Spitall Hill, the Asian community from Darnall, the Yemeni and white community from Attercliffe and the people from Manor, Brightside and the eastern periphery of Sheffield. Inside Castle House it is easy to get lost among the varied stalls selling Caribbean fish, Halal meat, fried onions, fish and chips, women's tights, trainers, track-suits, and fishing rods.

Its popularity is due to its low-priced goods, especially its woollen clothes. A sweater that costs £40 at M & S and £25 at C & A can be bought for £5 at the stalls in Castle House. Indeed most of the woollen clothes of M & S can be found at Castle House for half the price. The reason for this is that M & S puts out the manufacture of hosiery and knitwear to female labour in several ex-mining villages of South Yorkshire. For instance, in Ollerton male employment in the local coalfield was totally replaced by outworked female labour for M. & S.[215] Thus, the clothes sold in the Castle House stalls, according to Milly, are the remains of a chain of informal distribution of outsourced work that spreads throughout the ex-mining villages of the region. Similarly, chicken and pork meat is often on sale at bargain prices, due to the fact that this meat – slightly out-of-date – disappears at night from the rubbish containers in the Tesco and Safeway's yards to reappear on the following day in the meat stalls of Castle House. 'If you don't bother for its yellowish appearance' – Freda claims – 'it tastes all right'.

I have been to Castle House several times with Teddy, Tony and Alan, mainly on Mondays, when the second-hand stall of angling equipment is open. Here, ex-steelworkers and miners gather to update their angling gear or to invest in new fishing rods, the best assets 'to spend your time cheaply when you are on the dole', according to Jim, an ex-employee of 'Special Steel' who fishes every day in the tract of the river bank outside the firm. In Castle House a second-hand fishing rod can be purchased for £2 and full angling equipment (rod, line, floater, worms) for £20, whereas in the two main Angling shops in Sheffield, the minimum price for a fishing rod is £50.

[215] In the period 1993-97 the hosiery and knitwear industry in Nottinghamshire employed 14,500 people. The core of M&S' profitability relies on its outsourcing of knitwear and hosiery to small local firms and out-workers.

Castle House is also called the 'Dole Market' because most of the people who gather there are on the dole. To them, it provides 'the same' goods that are sold at Tesco, Safeway and M & S at a cheaper price. Because in Sheffield the local corner shops cannot afford the distribution of fresh food, Castle market has also became the main market where the Caribbean community buy coconuts, fresh lime and parrot fish; the Bangladeshi of Darnall buy bags of broken rice, huge bundles of fresh coriander and spices; and the Attercliffe people buy second-hand meat and bags of frozen trout. Besides, people on the dole meet, having signed on at the job centre, in the crowd of the market and in the several small and greasy 'English breakfast', 'kebab' and 'fish and chip' restaurants scattered on the two floors of the building. Children play in the amusement arcades and elderly Asian people sit behind the market stalls overlooking their family businesses. The Police constantly patrol the borders of Castle House, but rarely enter inside it. A Miramax complex, with several cinemas and shopping centres, is to be built on the premises of Castle House, which will be relocated elsewhere. But Tony and Alan claim that Castle House will never close. In fact, 'where will all these people on the dole spend their time if 'The Castle' closes down?' The people of Attercliffe go to Castle House mainly to socialise and they complement their purchases there with purchases of clothes, durables and food that follow more informal and personal 'styles' of negotiation and chains of distribution.

Examples of these informal transactions of food are the bread and oats that Ted exchanges with Bob in return for his servicing of Teddy's machine; the chicken breasts and legs from the slaughterhouse facing Morris in exchange for Bob and Tony's services (and the carcasses and claws that are given to big Dave for his mother to make broth); the fresh trout that are stored at Mr. Taher's 'Tandoori' restaurant for the restricted *clientele* of Attercliffe, and the dense exchange of vegetables taking place in the Asian allotments in Darnall Road.

The purchase of durables takes place in the two 'swap-shops'[216] in Attercliffe Road. In the 'swap-shops' goods stolen from rich areas of Sheffield, mainly where the students live, are sold to the locals. Teddy's definition of a swap-shop is 'a place where goods that are thrown away by rich people are repaired by more manual people and given

[216] Stack (1974: 38) has highlighted the importance of 'swapping' in the microeconomy of the flats.

value again'. Brian's definition of a swap-shop is 'a place where you can exchange things that you don't need anymore with things that you need'. These two definitions highlight the fact that swap shops are places where not only used (stolen) durables can be bought, but also where objects with roughly the same value are exchanged. Swap-shops are a modern version of the ancient 'swag shops' described by Leader as follows:

> 'swag-shops were establishments that preyed on the misfortunes of the others, mainly of the 'little mesters' in difficulties. When short of ready money, and without an immediate market for their goods, they sold them to the swag-shop, at, of course, a large percentage of loss. But what was worse than this, unscrupulous factors' buyers would make excuses to reject goods they had ordered when brought in, with the deliberate purpose of forcing the makers to the swag-shop, and of buying them thence themselves at a lower price' (1875: 138). Swag shops not only disadvantaged the small producers vis-à-vis the big merchants, but also the workers vis-à-vis their employers, by allowing these latter to recur to the so-called 'staffing system'. Under the staffing system 'the workers would obtain on credit from the swag shops various articles of food, especially cheese and tea, and every description of clothing. This staffing was not only compulsory, but the prices charged were exorbitant; of course they were paid for by a 'setting up' or stoppages on the cash side of the wages' book. This was convenient for the employer as a mode of barter between him and the merchant with whom he dealt, and both made an unfair profit by it, and it tethered the workman by a perpetual debt' (ibid: 137).

Thus historically, swag-shops were storage places, where Attercliffe middlemen organised local sales and the barter of goods – tea, drapes, spirits, food, knives, tools – outside the formal circuit of the town market or of the Cutlers' Company. According to old Fred 'swapping' was still practised in the 1950s, for instance in the backyard of Henry Pierrepoint's butchery where meat, bread and spirits were given to local workers in advance for future work. Today, the two Attercliffe swap-shops perform the same function of local redistribution. In fact they not only sell TV's, stereos, washing machines, dishwashers, radios, VHS used tapes, stereo cassettes, newspapers, books, chairs, kitchen stoves, desks, hairbrushes, snooker poles, fishing rods, tools, bicycles (etc) at 'non-economic' prices, but they also allow space for barters and negotiations between the dealers and the customers.

One night at the pub, I told Teddy, Brian and Tony that I was looking for a bicycle. When Brian suggested that I go to the swap-shop I replied that I had already been there and that the bicycles displayed there were overpriced. The following week, Tony told me that he had popped into Bill's swap-shop and asked him to look for a 'posh' bicycle

at a bargain price. Despite my qualms, Tony told me, after a couple of weeks, that Bill had found the right bicycle for me ('posh, black, with 4 gears and a safe lock') in the 'Upper town' (the middle-class area in Sheffield) and that he was waiting for me at the swap shop with £20 'in cash'. When I realised that Tony had commissioned a burglary for me, I became a bit nervous and I said that I didn't need the bicycle 'that much'. The event caused tension between us, but it was eventually forgotten, thanks to Bill's entrepreneurial spirit. In fact, Bill managed to convert the bicycle into goods (a fishing rod for me, a new snooker cue for Teddy, a compilation of 'The Pretenders' for Brian and a pair of trainers for Tony) that we eventually agreed to buy.

Finally, the wide web of 'Charity Shops' surrounding Attercliffe (I have counted 32 of them) provides most of the local people with a stock of clothes throughout the year. In fact, twice a week, Freda, Lisa and Molly shop at the local charity shops, buying 'posh' skirts, woollen hats and heavy socks for the winter, and second-hand bags or jewellery for Saturday night at the Attercliffe club. The only item of conspicuous consumption bought in the household are Teddy's trainers that he buys brand new at the Castle Market and proudly displays at the Morris forge, by Khaled's snooker table and in the streets of Attercliffe.

The people of Attercliffe don't know the meaning of 'leisure' – as opposed to 'work' – because they cannot afford to stay out of work. In fact, as Teddy lucidly put it to me by drawing up an account sheet on a small piece of paper, each day spent out of work can cost up to £20 in electricity, food, heating and ale. Thus, if Teddy's presence at home is not required to look after Molly, Carl and Ian (Freda's son) when Freda and Clare are working, Teddy avoids wasting time and money at home. Given that pubs, shops and the Castle Market also involve some money expenditures, the only activities that can cheaply and safely replace 'work' are walking or fishing.

Both activities are rooted in the history of the Attercliffe working class and still largely practised in Attercliffe. Thus, Tony often reminds me of his long family tradition of daily walks along Hathersage Road. Today, when back from work, he still wears his walking boots and walks along the Rivelin Valley where medieval grinding wheels, red brick weirs and Victorian grinders' cottages are embedded in the weeds, iron ore dots and thick woods along the river. Often, Tony evokes with pride the political struggles

through which the working class acquired the right to walk on the enclosed land of the aristocracy in the beautiful Peak District. Walking is the main form of socialisation between the 'Cliff lads' of different pubs in the evenings, the main form of locomotion that shapes the transactions between the workers of Bessemer Street and the workers of Morris and the only means of transport for tramps and runaways to go and come back from the city centre.

The act of 'walking' reflects the rural nature of Attercliffe's industrial past, when grinding wheels and small shopfloors were scattered along the river, confused with its nature and powered by its water. Also, it exemplifies the kind of relations that small producers have with their environment and among themselves outside the urban spaces and times of industrial mass production and reflects their freedom of movement in the spaces of production. In the past, the act of walking on the shopfloor was disciplined and sanctioned[217], and still today it is seen either a sign of higher status, or as an act of sabotage.

I have already stressed the historical importance of 'fishing' for local consumption in Chapter 2, and I have highlighted the historical transformation of fishing from a productive activity – embedded in the subsistence economy of the tool producers – into a leisure pursuit. I have also shown that fishing rights have been progressively monopolised by the industrialist members of the Water Corporation. Today, in Attercliffe, 'fishing' is not only a leisure activity, but it is also a way of training young apprentices, a way of job-searching and of securing food.

For instance, when Alan was training me on his centreless grinder in Morris, he also insisted that I should receive proper fishing training. During a normal fishing trip, Alan and I would sit a few metres apart from each other, around the fishing pond that was dug up in the middle of the closed pit where he worked as a face-worker in the past. Around the pond, we shared a few comments about Morris, looked at the nature around us and concentrated on the tip of the fishing rod. Often, ex-miners recognised Alan and after having exchanged the names of common friends who had been working

[217] The historical records that I have collected in 'Shardlow', another firm that I studied in Sheffield, reveal the political nature of the negotiations between the management and the trade unions, regarding the workers' right to walk, and the historical transformation of company regulations on 'walking matters'.

underneath this fishing pond as miners, they sat between us in silence. The job of setting up the rod, adjusting the floater to the depth of the pond, tying the knot around the hook, and casting the feeder in the right part of the pond are manual skills that require the same patient apprenticeship as the job at Morris. The continuous glancing at the tip of the rod requires the same concentration as a milling machine and the catching of the fish recalls the unpleasant re-awakening that comes when production stops. In fact, when Alan catches a fish, he claims with an annoyed expression that 'he can't be bothered' to fish and that he only comes here to enjoy nature and have a chat with his fellow ex-miners. After several fishing trips spent with Alan, I realised that by fishing he engages with the same practical knowledge that he shares with the workingmen around the pond, and he gets in touch again with the underground world where he used to spend his working days in the past.

'Fishing' is also a way of securing jobs and food, or expressing political belief. In fact, some people fish in the river Don to cover their drug deals; casual labourers fish along the posh areas reserved for the 'Abeta' and 'Forgesmater' steelworkers to ask the managers or foremen for a job during their break-times; Steve fishes in the Don to provide Milly's house with something to eat; Tom poaches along the river bank reserved for the 'fly fishing' clubs in Derbyshire 'to take back from the bastards what they have stolen from us'.

The only money that Teddy spends for 'leisure' is the £50 he spends on snooker, ale and small bets in the local pubs during Friday, Saturday and Sunday nights. Nevertheless, I never had the impression that Teddy considered his presence at the pub in terms of 'leisure' only, given the amount of time he used to spend on small transactions, job searches and allocation, and on the building up of social connections with the local entrepreneurs, scrap merchants and heroin dealers.

In conclusion, in Attercliffe, the separation of 'work' from 'leisure' only partially happened. Besides, in Attercliffe, the 'anonymous, mass market in retail trade'[218], based on impersonal transactions of standardised goods, is embedded in networks of personalised transactions. Unlike the transactions of neoclassic economics, which are

[218] Carrier (1995: 84).

supposed to take place between anonymous individuals trying to maximise their profit, these transactions take place between familiar individuals trying to minimise the risks, like at Bill's swap-shop, and to establish long-lasting relationships, as for Bob and the owner of the chicken slaughterhouse. What prevents the spread of mass consumption in Attercliffe is also the low level of mechanisation of its households. In fact, most women in Attercliffe prefer to 'produce' cleanliness and food 'manually', rather than resorting to machines that suck-up dust, freeze food and wash dishes. Besides, durables and clothes are continuously mended, repaired and re-assembled, as if the labour incorporated in them increased their value. These goods are never bought new, and never thrown away, but taken to swap or Charity shops, where they re-start their life as durable, anew. The consumption activities of these households also involve intense male productive activities, such as fishing or gardening, through which fish and vegetables are steadily supplied.

In this section I have shown that the 'artisans' of Attercliffe both sell their labour in the labour market and use their labour independently from the capitalists; they sell their production both into formal and informal markets; and they consume both standardised and locally produced goods. This section, and the previous section on extended families, therefore suggests that the artisans of Attercliffe use the same reproductive strategies of their ancestors, which I have described in Chapter 2. In the following section, I will describe the reproductive strategies of today's 'proletarians'.

Working class estates

Charlie and Vicky, Kiveton Park.

Charlie, the worker of UNSOR that I described in Chapter 3, was born in Sheffield 41 years ago, the son of an ex-pit helper turned busdriver and of a housewife. Charlie lived in a council estate north of Sheffield when, at 16, he decided to leave school and join the Royal Marines. After a second attack of epilepsy – due to overdrinking – Charlie left the Marines at 19 and returned home. Having married Sylvia in Sheffield, he left for the Falklands where he became a community policeman. Sylvia didn't follow him to the Falklands and in fact, she told him of her intention of divorcing on the telephone.

Charlie still remembers her words coming out from the Army mobile phone that he was holding while sitting in the Jeep in torrential rain in Tinlet Island, Falklands. After divorce and a third attack of epilepsy that almost led him to a court martial[219], Charlie returned to Sheffield, where he spent two years on the dole. Having found employment in UNSOR, in Kiveton Park, and fallen in love with Vicky, a local nurse, Charlie moved to Kiveton Park, where he married Vicky and bought a three-bedroom terraced house for only £13,000. At the beginning Charlie suffered the 'small mindedness' of the people of Kiveton Park but with time he learnt to enjoy the company of Vicky's brother and of her cousin, both workmates of his at UNSOR and his drink mates at 'The Lion' on Friday night. Charlie and Vicky have two children, Steve and Clare. Steve is now 16 and left school two years ago to work at the Aston Kentucky Fried Chicken. Charlie is very proud of the fact that his son has not been sacked yet given his slight mental handicap. Clare goes to the local secondary school and plans to become an officer in the Marines.

Charlie claims to have spent every single spare moment of his last twenty years of married life with his family. Firstly, he spent most of his weekends redecorating the house, paying particular attention to the children's rooms. Clare's immense attic room – with its pink walls, violet curtains and broad window – looks like a candyfloss cloud. The room is filled with small pink, violet and pale blue objects: small picture frames, small plastic dolls and jewellery, small plastic clocks and candles, pencils and pens scattered all over the pink plastic table by the window. The room is very light and Charlie often uses it to play the guitar and sing when Clare is not around. Jim's room has been the outcome of Charlie's woodworking efforts. In fact, the room's marine layout – with round windows, a small bed and a variety of golden fittings – has been entirely thought out by Charlie, with small variations on the IKEA instructions. Clare often sneaks in the room, when Jim is not around, given her passion for marine lifestyle. Over the last two years, when he started his nursing degree, Charlie has also built a small study space within the dining room, where a computer sits on a small desk facing the dining table. In 2001, when Charlie was made redundant at UNSOR, the income of the family drastically dropped. Whereas Vicky and Charlie previously had a joint yearly income of £25,000, now their joint income had dropped to £ 8,000. When Charlie

[219] Charlie was on duty on the night that he got drunk and fell ill.

started his part-time job at the Todwick Nursery, their income increased again to £14,000. This was still not enough to pay for the mortgage (which due to the negative equity of the house, was rising above the rent levels), for the costs of Clare's education, for Charlie's books for his nursing degree, for the house bills, for a new television to replace the broken one and for a couple items of household furniture that Charlie had recently bought through a catalogue firm and on which he had to repay several instalments.

A few months ago Charlie and Vicky split up and they are now divorcing. Vicky has moved to a new flat and found new employment as a secretary in a local food factory. Charlie is staying at his home with the children who will stay with him. Since they split up, life has been 'pretty awful' for Charlie. In fact, he is struggling with expenses that he cannot meet with his income of £7,000 per year and for this reason he is now applying for housing benefit. After Charlie and Vicky split up, Roger and Mick – Vicky's brother and cousin – disappeared, partly because they sided with Vicky and partly because they found employment in a local wire company – in fact, the previous cold department of UNSOR – and therefore they rarely have the chance to meet him during the day. Charlie doesn't feel like going to the Lion anymore as he is now a nurse and he thinks he doesn't have much to share with his ex-steelworker mates. Mostly, what makes Charlie unhappy is the intense isolation he is now suffering at Kiveton Park. In fact, without Vicky and her money, the family life that previously filled his days when UNSOR was on short time and during the weekends has suddenly disappeared. In the past, the family would spend the weekends in a variety of shopping activities and leisure pursuits: long drives to the IKEA in Leeds; entire days spent in one of the 23 ethnic restaurants located in the massive round 'Coca' Cola cupola' of Meadowhall Shopping Centre or at the Sheffield M & S and excursions to the Leisure Park, to the Magna Science Park and to the Attercliffe BINGO. During the week days when he was out of work, Charlie liked to shop with Vicky at TESCO in Aston and to fill the car with all sorts of frozen food bought at Iceland or at the Sheffield Retail Park.

Consumption and leisure activities seem to have kept the family together for twenty years and now that the family has broken up, and the household income has plunged, Charlie is throwing himself into his nursing job to give a new twist to his life. In fact, he is now deeply involved in his nursing degree and increasingly integrated in the female

worlds of the nursing home. But life at Kiveton Park is still 'pretty awful'. Wales Street, where Charlie lives, is constantly immersed in heavy traffic, due to the fact that it connects several big villages, like Ashton, to the A25, the dual carriageway that leads to the M1. In Charlie's living room the noise of the cars is so loud that conversations require shouting and television must be watched at high volume. The noise of the traffic outside, the distance of the only shop open after 6 p.m. (the 'Esso' petrol station) and the lack of familiarity between the people living in the two main roads, transform homes like Charlie's into real fortresses and reinforce the sense of intimacy of the members of the household.

With no local pub, shop or public venue where they can meet, the families of Kiveton Park close themselves inside their homes or inside their cars when they travel to some shopping centre or leisure park of the region. Besides, given that their relatives live in distant towns and that their friendships develop inside the workplace, familial breakdowns and sudden unemployment breaks the household indissolubly, leaving its members without a safe social network apart from the benefit cheque (which, as I have shown above, is not enough). The lack of social interaction in Kiveton Park, also affects the chance of finding new employment. In fact, not only do the chances of finding employment in the formal labour market increase due to one's personal connections, but also the possibility of complementing the dole cheque with informal economic activities and illegal trade depends on the existence of a local social network. Thus, unlike in Attercliffe, unemployment and divorce in Kiveton Park – and in most working class estates of the region – throw families into disarray and definitive dissolution.

Back to Attercliffe

Steve is the grumpiest lodger at Milly's 'Black Sparrow'. In the morning, when asked how he was, he always replied, 'I am shit, thanks for reminding me'. Indeed, Steve hasn't been lucky in the past, and today he is one of the poorest men in the Cliff. Steve's grandfather worked for a few years as a 'clinger'[220] at the Firth-Brown's rolling division in Brightside Lane and, after that, according to Steve, he 'was on and off work for all his life'. Steve's father started to work as pit-helper at 'Jessop', just before the

[220] Unskilled labourer.

Second World War, and in the 1960s, Steve's family moved from the company houses of Brightside Lane into a council home in Gleadless, which Steve, who was only a 16-year-old at the time, remembers as being 'very posh'. When the family purchased its first dishwasher, a few years later, Steve thought they 'weren't working class no more'. Steve started to work in 1966, as a second-hand melter at the melting shop of the Brown Bayleys. He said that he didn't get a job at the melting shop of Jessop, because of the bad reputation of his father as a pit-helper. Unlike his father, he was ambitious and thought that he could become a melter by the time he was thirty. The Brown Bayleys stood in the past where the Arena is now. The factory's walls backed onto the backyard of the Black Sparrow and its workers had made a hole in the wall of the pub's backyard, from where they ordered beef sandwiches and ale to the pub's landlord. Steve slept at the Black Sparrow twice a week, in one of the rooms for rent to the company workers. He claims that he did so, because in those days he had the afternoon shift only a few hours after the end of the night shift, and that, had he gone home, he wouldn't have had any resting time between one shift and the next. Nevertheless, some informants of mine claim that he stayed over because of one girl who often popped into the pub in the evenings. Steve had now moved to Woodhouse, on the eastern periphery of Sheffield, with Jackie, whom he married in 1974. He was only 23 years old, but the pay was good and Jackie was pregnant. When the company closed down, in 1982, Steve lost his job. Steve's dad had already died, and his mum lived on a state pension and in a small house so that she could not help them. Steve applied for several jobs, but he didn't find any. 'Helpers', he claims 'have a lot of knowledge but not enough formal qualifications', and in time of crisis, they are the first to be made redundant in the melting shop. Jackie's family could not be of much help either, partly because they lived on the other side of Sheffield and partly because they hadn't money of their own to spare. According to Steve, they didn't help them because they didn't like him. Steve and Jackie eventually split up, and Jackie kept custody of the child, and the house, thus agreeing to release Steve from further financial obligation.

With the increasing mechanisation of the melting shops during the 1980s, Steve's 'melting skills' fell into demand. With the boom in the house market, council houses in the suburban areas around Sheffield were sold, and their residents moved further away. Steve could not even afford to pay the bills of the council home, due to the fact that he spent all his dole money on ale. Eventually, he moved to Attercliffe, where he slept

rough in a broken storage container behind the cemetrey. In Attercliffe, he had a few temporary jobs that allowed him to drink more, and to meet a few people, like 'shot-hand' Billy and Milly, who had become the new landlord of the Black Sparrow. Milly says that Steve looks exactly the same as when he was a young lad. Steve thinks that although she was stewardess at the 'Black Sparrow' since the 1970s, Milly could not possibly remember what he looked like. Steve has lived at Milly's for almost twenty years now. When the DSS cheque slips through the letterbox, Milly quickly gets hold of it and forces Steve to the Bank, where he deposits it and takes out the money for the rent. Steve still does a few jobs for Billy 'shot-hand', with whom he also shares the toilet and the breakfast room at the Black Sparrow. He now has a more stable life and regular 'part-time' jobs, but at the end of the week, when he gets to Khaled's, everyone knows that he won't take part in rounds of drinks with the other Cliff lads.

Conclusion

In this chapter I have highlighted two different family structures and patterns of consumption of two different spaces of poverty that coexist within the steel industry today.

In 'poor neighbourhoods' like Attercliffe, markets and families are flexible and mutable institutions as a response to structural socio-economic factors. In fact, with regard to the Attercliffe families, casual labour, young age and the structure of the labour market encourage fission among the members of the family, whereas the structure of state welfare, illness, ageing and the high cost of stable dwellings[221] encourage the re-grouping of different 'lone persons' into extended families. These opposite movements make the partitions of members of the same family from the parental home always transitory and the grouping of members of different families into the same 'home', more lasting than one would expect.

As a result, the Attercliffe families are very different from the stereotypical image – perpetuated in recent studies on social exclusion[222] – of working class families split

[221] Combined with the lack of stable institutions for casual labourers, like the casual labour market and cheap dwellings described by Tom Gill in his ethnography of Yokohama casual labourers.
[222] Lupton (2001); Mumford (2001); Bowman (2001).

between the nuclear households of the male wage earner and the single-parenthood of the long-term unemployed. Rather, they are enlarged networks of friends[223], kin and parents expanding and contracting between the spaces of 'home' and the spaces of the 'neighbourhood'. From this point of view, the very distinction between nuclear and extended family loses its relevance because the moral and physical boundaries that define the 'relatedness' of the household members'[224] are negotiated anew each day in order to strike a difficult balance between individual freedom and mutual obligations, and between individual economic maximisation and collective risk avoidance. In fact, in Attercliffe loose social interactions consolidate into familial relations, whereas nuclear families struggle to accommodate the contradictory needs for independence and mutual help of their members. As a consequence, people shift between the individualism that gives them economic independence (through casual labour or state benefits) and the relatedness that reveals their dependence.

Similarly, the people of Attercliffe have developed highly flexible and differentiated strategies of exchanges and ways to ensure their reproduction drawing on local resources and styles of transactions. 'Swap-shops', the Castle Market, local allotments, supermarket yards where out-of-date food is piled and charity shops are the markets where poor people buy and exchange goods and food. In these markets, clothes and durable goods continue to circulate for several years and are exchanged several times. For instance, my 1960s fishing rod was exchanged several times on the Morris shopfloor throughout my fieldwork, its price constantly decreasing, before I purchased it from Alan for £2. In places like Billy's swap shop, prices vary according to the identity of the transactors[225] and to the dynamics of the negotiations taking place at Khaled's pub. Finally, in 'poor neighbourhoods' the separation of the times and spaces of 'leisure' from the times and space of 'work' didn't happen. In fact, 'leisure' is the ideological inversion of the work discipline of industrial capitalism and is embedded in institutional spaces – the home, the leisure centre, the modern pub – that the people of Attercliffe don't recognise or can't afford. Scattered between the pubs, the shopfloor and home, their good times are always mixed with business deals, domestic fights and hard work.

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[223] For a similar distinction between 'kinship' and 'friendship' among migrant casual labourers, see Hart (1988).
[224] For the notion of 'relatedness', see Carsten (2000).
[225] See Alexander and Alexander (1991).

The second space of poverty that I have analysed in the chapter comprises the council estates located in the ex-mining villages between Rotherham and Sheffield where the nuclear households of working class families have recently developed. These households generally rely on the double income of the husband and of the wife (£20,000- £25,000 per year)[226] but, given the precarious nature of female employment in the service sector, the wage earned by the male manual workers is still considered the more reliable source of income for the family and he is the real family breadwinner[227]. The small nuclear families of Kiveton Park enjoy a higher standard of living: weekly shopping at M & S, trips to leisure parks, IKEA furniture and holidays at Skegness, Whitby or Blackpool and a stable married life. Nevertheless, unemployment and marriage breakups have a disruptive impact on the lives of its members, due to their lack of social connections outside the domestic spaces and, therefore, their lack of additional resources –friends, jobs and temporary accommodation – to face the cyclical slumps of the steel industry. As the story of Charlie reveals, the 'typical industrial household' is suspended between the security of the wages of its male breadwinner, the solidity of its house walls and the luxury of its lifestyles on the one hand, and the dangerous lack of resources 'external' to the family (local markets, hidden shopfloor and friendly accommodation) on the other. Besides, as the case of Steve shows, 'proletarians', who support nuclear families with wage labour, are exposed to the dangerous fluctuations of the steel labour market and to the socially disruptive effects of unemployment, and they move to Attercliffe in search of cheap accommodation, social networks and informal economic transactions, when they are made redundant.

In his *Time and Social Structure* (1970), Meyer Fortes stresses the importance of considering the long-term dynamics of structural principles of social organisations. In this chapter, I have followed Fortes in showing the interrelations between nuclear and extended families and the structural conditions underpinning their long-term dynamics. Unlike Laslett's emphasis on the historical invariance of nuclear household types in England, my historical and ethnographic evidence suggests that 'nuclear' and 'extended' families are two structural types that vary according to macroeconomic and political factors. In fact, working class households expanded into extended families and

[226] See statistics at the previous chapter.
[227] This point has been convincingly made by Smith (1984).

fissured into nuclear ones following the economic busts and booms in the steel industry and as a consequence of public housing, welfare and transportation policies.

In Attercliffe, housing policies encouraging temporary residences and discouraging home ownership; welfare policies discouraging the formation of independent nuclear households and encouraging expanded households; and economic policies aimed at increasing casual and flexible labour have created the proper structural condition for pooling human and economic resources together during financial hardship, whilst pushing them apart in times of prosperity. On the other hand, in the residential suburbs of Sheffield, the state encouraged the wage earners to buy council homes, developed roads that made commuting between Sheffield and the suburbs easier and allowed generous family double-earnings and a prosperous lifestyle through the increase of female employment in the service sector. All these policies pushed the household members together in small families and big houses located in ghostly ex- industrial villages like Kiveton Park. Nevertheless, it is precisely the isolation of the tenants of Kiveton Park – in their eyes a sign of a well-to-do lifestyle – that fragments their nuclear families in times of de-industrialisation and during the downturns the service sector.

Anthropology, with a few exceptions, has ignored the impact of the state on kinship. As a result, 'typical' household structures have been studied as 'cultural features' relatively independent from the play of politics and economics[228]. Unlike these approaches, Parry's (2001) study on kinship among Bhilai BSP workers, and Gill's ethnography (2001) of Yokohama day labourers show that the 'ideology of marriage' – or its absence – cannot be isolated from its political and economic contexts.

Besides, my ethnographic evidence contrasts with the orthodoxy of Social Policy scholars, which focuses on the fragmentation of the nuclear families of 'poor neighbourhoods'. Social Policy studies on kinship, suffer from two important limitations. The first, is their theoretical focus on the nuclear family, and the conjugal couple, as the sole significant units of analysis. My evidence suggests that 'nuclear families' and 'conjugal couples' are notions that make little sense to the people of

[228] See, for instance, the work of Edwards (2000) and Macfarlane (1978).

Attercliffe, where divorced couples often live together; non-married individuals form stable couples; husbands spend a long time away from home, working as subcontractors, whilst their male friends or kin perform their role of breadwinner; adult children return to the parental home several times during their lifetime; and children become independent from their parental household in the very early stage of their childhood. Unlike the claim of Social Policy scholars, nuclear families – in 'poor neighbourhoods' – are embedded in larger social networks, and therefore their breakdowns and formations are never definitive, as their members continue to interact in the larger network of the community. Their second limitation is methodological. For instance, Bowman's study of the families of poor neighbourhoods in Sheffield relies on interviews she collected in local community centres. Interviews often project the biases of the researcher onto the interviewees; for instance, Bowman's questions focused mainly on marriage, divorce and on the experience of being single parents. Secondly, unlike participant observation, interviews transform statements into typical social scenarios, without paying attention to the contexts where questions and answers acquire their meanings. For instance, it is not surprising that people interviewed in a community centre would describe their experience of divorce as devastating. Nevertheless, this is not the way Teddy, Milly, or Freda described to me their experiences of divorce at the Attercliffe Liberal Club. Finally, the institutional role of Bowman as interviewer and the institutional setting where she conducted the interview, are likely to have led the interviewees to perceive her as 'a social'. As Dicks, Critcher and Waddington (1996) show in their study of social service providers in the ex-mining communities of South Yorkshire, the sense of loss of dignity experienced by redundant manual workers is reproduced by local service providers. Besides, as Stronach (1990) has argued, social service providers pathologise the experience of unemployment, framing it in terms of individual psychological problematic. As a result, 'poor' people talk to 'the socials' mainly about the 'devastating' events of their lives, if anything, because they think that their unemployment and disability benefits ultimately depend on the painful nature of their recollection. Tales of 'a social' moved to tears by Tony's performance on the white-finger test machine[229], made the guys laugh by the snooker table at Khaled's, but probably it reinforced their sense of shame in both depending on and cheating the state.

[229] A machine that tests the sensitivity of the nerves of the fingers with heat.

In conclusion, the ethnographic evidence I collected throughout my eighteen months spent in Attercliffe, is that the 'lone parents' so vividly described by Bowman are in fact, not alone but surrounded by friends, new or old partners, the adult wage earner's children and parents. On the other hand, the conjugal families of the industrial proletarians, are on their way to dissolution and unlike the Attercliffe households have few chances of recomposition.

CONCLUSION

In my work, I have focused on Marx' theory of praxis – on the relationship between the subjective experience of labour and its experience in reified form, that is, as capital. Following Marx's line of enquiry in the *Grundrisse* (1973) [1857], I have highlighted the historical determinants of working class consciousness and analysed how past ways of looking at the relationships between capital and labour have been materialised on Attercliffe shopfloors and in its neighbourhoods in times of de-industrialisation and flexible production.

In my historical reconstruction of the 'making of the Sheffield working class', I have shown the slow process of fabrication of the industrial proletarians and of the 'free labour' that emancipated them from the Attercliffe slums. On the shopfloor, the proletariat emerged from the deskilling of craftwork and from the intensification of production of early industrialisation. Outside the shopfloor, the creation of the wage labourer was the result of the joint efforts of the trade unions and of the capitalists, speculators and utopian socialists that shared the Board of the Sheffield Corporation and was mirrored in new public architectures, residences, family structures and leisure and consumption habits of the working class. The emergence of the Sheffield working class from the dense social and economic texture of Attercliffe was a slow process of disconnection, disentanglement and re-ordering of several subjective and objective elements that were fused together in the consciousness of the early working classes. Affines and kin were separated into different nuclear families; production for self-consumption and production for the market were separated in different spaces; production and reproduction separated between different genders; houses separated from the workshops, politics from the pub, and fishing and farming separated from industrial labour, following the new dividing line between 'nature' and 'industry' deriving from urban ideology.

Nevertheless, in my historical reconstruction, I have also shown that the craft artisans – with their patriarchal and extended families, their hierarchic and bonded apprenticed labour, their mixture of household production and reproduction and of market mentality and moral obligations – survived industrialisation and became a complementary and symbiotic social formation to the industrial proletariat. Thus, in times of industrial decline, industrial proletarians migrated to the Attercliffe slums; unemployed engineers attended the meetings of the Attercliffe NUWM; trade unions sought the help of the

local gangs; nuclear families rejoined their kin in the Attercliffe back-to-back houses and conspicuous consumers returned to Attercliffe to buy Pierrpoint's 'slink' meat or Fletcher's stale bread.

From this point of view, I have modified Marx's (1973: 84) claim of the progressive 'separation' and 'objectification' of the working class from its total social and economic texture and shown the coexistence in Attercliffe of two forms of working class consciousness: the consciousness of the artisans – made of connections, of centrifugal social relations, of deep understanding and control over the labour process and the consciousness of the proletarians, made of disconnections, centripetal migrations and objectified labour.

In the second part of the thesis, I have analysed working class consciousness at the point of production in the light of the ideology of flexible production. In the case of UNSOR, I have shown that 'flexible production' entails a fragmentation between craft workers and labourers at several levels. At the macroeconomic level, flexible production polarises the steel industry between conglomerates mass producing low-quality steel and small and labour-intensive machine shops. At the level of the shopfloor, flexible production entails the deskilling of the craft workers who control the capital-intensive and 'hot' phases of the production process and the economic empowering of the labourers of the finishing and labour-intensive end of the production process. With regard to the politics of production, flexible work increases the workers' fragmentation. In fact, flexibility transforms the conflict between capital and labour into a conflict between different sections of the workforce and between different 'images' of labour: the young, flexible, modern and fast labour of the cold workers, and the dangerous, hard, hierarchical, obsolete and slow labour of the ageing workforce of the hot department.

Flexibilisation also increases the subcontracting of work to firms like Morris and on its shopfloor, the same fragmentation between the older craft workers and the younger labourers, along the fragile line that divided the 'hot' and the 'cold' department. In Morris, the craft workers control the production process and own their tools, they are both wage workers and petty entrepreneurs; they work for self- gratification and for self-profit, they structure their social relations with the apprentices and with outside economic transactors hierarchically and mix work and family in the neighbourhood. The

labourers of the cold department don't own the tools or control production; they work for money, produce in groups, act collectively, build equalitarian social relations and separate the times and spaces of production from the times and spaces of reproduction.

The closure of UNSOR and the resilience of Morris in spite of its several periods of short-time working, temporary closures and the breakdown of its old machines, shows that flexible production encourages – *pace* the New Labour government – the polarisation of the steel industry between conglomerates and small-scale firms, and the deskilling of waged craft workers through the outsourcing of production to outside 'journeymen'. I have also shown that this polarisation allows the capitalists and the state to externalise welfare and organisational costs – the social costs of production and reproduction – to these 'journeymen' themselves.

In the last section, I have followed this last point and shown that flexible production is reinvigorating ancient working class strategies of production and reproduction with which the workers struggle to stay above the poverty line. From the point of view of the organisation of labour, flexible production has restored the cutlers' practice of 'hiring labour'; the dense web of productive transactions in the neighbourhood; the mixture of entrepreneurship and wage labour of the 'little mesters'; the bonded labour of the apprentices. From the point of view of reproduction, de-industrialisation has restored extended families, flexible accommodation, the political and welfare functions of the local pubs and bonds of trust, and friendships that cut across civil society and the family.

Read together, the UNSOR and the Morris chapters reveal the inconsistencies of the myth of flexible production and the continuity between 'late' and 'early' capitalism. In fact, late capitalism, like early capitalism, relies on the fragmentation and interdependence between small-scale artisan production and industrial mass production and on its ability to shift between the two times and spaces of production. Still today, it is more convenient for the steel entrepreneurs to subcontract production to the Attercliffe 'journeymen' than to sustain the costs of a stable workforce like that of UNSOR. From the point of view of the workers, wage workers like Charlie are not better off than Bob or Tony. On the contrary, their lack of informal economic networks in the neighbourhood to cope with the instability of the jobs in the steel industry and the service sector, where their wives are employed, make their position precarious and their

migration from the working class suburbs into the Attercliffe slums – and from the cold into the hot department of Morris – an increasingly practiced strategy of survival.

Thus, with regard to the first question of my thesis, workers have different philosophies of work and fragmented experiences of 'capital' and 'labour' even in small shopfloors like Morris. This fragmentation is the result of the decline of the solid narrative of 'the working class' – that followed the political retreat of trade unions and of the state – and of the re-emergence of the multi-layered and differentiated institutions and languages of the pre-industrial 'working classes'. As I have shown in my work, in Attercliffe the hierarchical and aristocratic ethos of the pre-industrial cutlers and the equalitarian ethos of the industrial wage workers have always coexisted[230]. My interest is to understand what are the political implications of this fragmentation today and whether this internal fragmentation increases or decreases the chances of survival of the Sheffield manual workers in times of de-industrialisation. Comparing the Morris and the UNSOR case, it seems that the coexistence of mixed moralities of work in Morris have increased the chances of survival of the firm, whereas the strong political consciousness of the craft workers of UNSOR, framed as in the case of the rolling mill in the discourse of class, have been one of the factors that led to closure of the hot department.

The closure of UNSOR and the resilience of Morris shows the emergence of new patterns of authority on the shopfloor associated with flexible production. Breaking with a 'Human relations'[231] tradition of co-opting the workers into production through their informal authority – exemplified by UNSOR – firms like Morris reproduce authority within the workforce. In fact, as I discuss in Chapter 4, the hot workers control the piecework system, the firm's technical structure and its disciplinary, training and recruitment policies, and for this reason, their authority overshadows the authority of the owner. This point confirms Burawoy's (1985) argument that flexible production involves the disappearance of hegemonic capitalism, that as in UNSOR co-opts the workers through a mixture of coercion and consent, and the emergence of a new form of despotic capitalism where coercion is reproduced at the level of the shopfloor.

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[230] See also Cannadine (1998).

[231] I am referring here to the Hawthorne experiments conducted by E. Mayo at the Western Electric Company in Chicago in 1927. For a full account on the early works of the Harvard Human relations school, see Roethlisberg, F. and Dickson, W. (1939)

In fact, in Morris, the hot workers are themselves 'capitalists' whose control over the production process and independent entrepreneurial activities create the precondition for their, and the cold workers', consent to production. In fact, they oppose the cold workers' discourse of interest, and their intensification of production that damages the machines, with their aristocratic morality of work and disguise the profits of the owner with their additional profits. Thus, they provide a counterbalancing point of view to the equalitarian and utilitarian discourse of class and to the bonus system through which the cold workers are co-opted into production. This coexistence of the morality of the 'master' and the morality of the 'slave' within the workforce seems to give stable equilibrium to small and un-unionised firms like Morris, whereas the emergence of a solid working class narrative in isolation and opposition to the capitalist class seems to increase the workers' vulnerability.

Following the essays of J. Carrier (1993) on emerging alienation in relations of production, I want now to assess the impact of the politico-economic change brought forward by flexible production on the workers' subjectivity. Carrier's analysis draws on K. Hart's (1983) comparison between Mauss' essay on the gift (1966) and Marx's *Grundrisse*, and on Parry's (1986) seminal article on the religious and politico-economic determinants of the ideology of the gift. Parry argues that the ideology of the 'pure gift' – together with the invention of the ideology of 'pure interests' and of the emergence of 'the economic man' – are more likely to emerge in societies with a strong state, an advanced division of labour and elaborated world religions. Parry's argument is corroborated by the evidence of my fieldwork, where the disappearance of the state and de-industrialisation are opening the boundaries of the firms like Morris into the neighbourhood and transforming 'purely utilitarian' economic institutions into political and social institutions that redistribute wealth, social services and political power locally.

Thus in Attercliffe, what are the implications of this politico-economic change on the workers' subjective consciousness of the relations between 'labour' and 'capital'? Do the opening of economic institutions into the morality and economy of the neighbourhood, and the blurring of the confines between 'interest' and 'gift' constitute a threat to the capitalist mode of production? And what are the implications of the

disappearance of the ideology of pure interests from Attercliffe on the discourse of class?

According to Marx, places like Morris are alienated precisely because they blur the morality of the 'master' and the morality of the 'slave'[232]. In fact, the hot workers use their personal connections in the neighbourhood and their control over the piecework system, both to increase the owner's profits and to maximise their profits; and to slow down the production of the cold workers and to maximise their bonuses. As a result of the hot workers' managerial control of the shopfloor and of their entrepreneurial activities outside it, they become 'capitalist', increasingly similar to Mr. Greid, and increasingly different from the 'labourers' of the machine shop. Consequently, the cold workers increasingly oppose to the owner's profit by challenging the authority of the hot workers. If this is the case, according to Marx, the workers of Morris are alienated because they cannot recognise their common material condition of exploitation, and they confuse labour in the forge with the owner's capital.

Besides, the embeddedness of the workers' activities of production in their re-productive networks, creates a situation whereby they make money through their intimate relationships, and, on the other hand, they adapt their social relations to the logic of interest, as happens at Khaled's. The importance of the social relations outside the shopfloor in reproducing the dialectics between master and slave must not be underestimated. More specifically, my case suggests that the medical discourse, centred on the moral and physical perils of manual labour, reproduce the master/slave dialectics

[232] I use the terms 'master' and 'slave', instead of 'capital and 'labour', in order to compare Marx's and Hegel's readings of Aristotle's master/slave dialectics. Hegel, in his *Philosophy of Mind* (1971), follows up on Aristotle's study of the institution of slavery in ancient Greece, and on his claim that slavery implies the rule of the master's soul over the slave's body. As Malcolm Bull (1999) has underlined, Aristotle's focus on the rule of the master's soul over the slave's body, understates the political implications of the freedom of the slaves' souls. With regard to this point, Hegel claims that it is precisely the master's control over the slave's body – taking place in the realm of 'work' – that creates a 'double consciousness' that ultimately empowers the slaves. In fact, the slaves' subjective realisation of the dominance of the masters' soul over their bodies lead them to the self-realisation of their enslavement and hence to their consciousness of the possibility of freedom. Marx roots Hegel's hypothesis in materialistic dialectic and claims that it is the slave's consciousness of the masters' control over his labour, and of its objectification into 'capital' that ultimately leads the slave to become aware of his state of deprivation. Nevertheless, according to Marx, the realisation of the condition of enslavement cannot happen if the slave thinks with the master's mind but only on the ground of the slaves' awareness that their different modes of thought are rooted in different material conditions. Thus if in Hegel the self-consciousness of the slave is the result of the blurring of his consciousness with the consciousness of the master, in Marx self-consciousness is a result of the opposition between these two different consciousnesses.

along generational lines. Younger workers perform labour-intensive tasks relying on the strength of their bodies and on their desire of hygienic and material emancipation from the dense and obsolete social and economic networks of the slums. Older workers increasingly perceive the decay of the physical strength of their bodies and retreat from the factory into the neighbourhood where they build hierarchical relations with young apprentices and kin. The former maximise wages through the discourse of money; the latter maximise social capital through the morality of kinship and of mutual obligations. As I show in Chapter 4 and 5, these two strategies are strictly interconnected. In fact, as younger workers are made redundant in the primary labour market, they move into the secondary labour market of Attercliffe, where they become 'young' apprentices of the elder workers – turned into masters.

This issue of class consciousness – or of its disappearance – is important in order to assess the chances of political reorganisation of the industrial workers in post-industrial times. In the concluding section of his *Working for Ford,* Beynon (1973) questioned whether the trade unions in the future will be able to avoid bureaucratisation and the politics of wage bargaining. The evidence of my fieldwork seems to suggest that the trade unions can exist only on the 'ideological' assumption of the existence of a solid working class, whose 'pure interests' are in opposition to the pure interests of the capitalist class. In other terms, my claim is that the trade unions have in the past been more successful when they focused on wage bargaining, and less successful when they subscribed – as during early industrialisation – to the capitalists' objectives of moral, spiritual or cultural improvement of the working class. Today, the disappearance of the 'pure interests' through which the working class constructed its boundaries in opposition to the interests of the capitalist class seems to have left the trade unions with no alternative but to retreat into the community – this latter, once again, perceived in opposition to the 'morality of work'.

In conclusion, in my work, I have challenged Lash and Urry's (1987) hypothesis that 'late capitalism' entails a paradigmatic shift from early capitalism due to three factors. The first is the dramatic change in the technology of production consisting in the increasing mechanisation of production and in the substitution of labour with capital. The second is the disappearance of the working class that followed this technological change and the third is the metamorphosis of the working class into the middle class. As

I have shown, in Sheffield the technology of production of steel still mixes the skills of the blacksmiths with the skills of the labourers; the working class is still split between proletarians and artisans and the middle class is a social space that accommodates the cyclical fissions of the working classes in the residential areas between the slums and the suburbs. Nevertheless, if anything, 'late capitalism' brought 'authority' and 'morality' back onto the shopfloor and created a situation where, without unions or supervisors on the shopfloor, the consent of the workers is extracted through the coercion deriving not from the authority of the capitalists but from the authority of the workers turned into capitalists.

M. Burawoy's claim that flexible production involves a new despotic factory regime seems to be confirmed by the evidence of my fieldwork. If in hegemonic regimes like UNSOR the interests of the workers were tied to the interests of their employers (1985: 149), in Morris, the interests of the employers and the interests of the workers are indistinguishable. In fact, in small firms like Morris the profit of the owner is interwoven with the profit of some of its workers and their social and economic networks outside the firm. The embeddedness of the productive activities of these small firms in the social and economic texture of the neighbourhood, ultimately shifts the cost of reproduction on the workers themselves, but also gives to the workers the impression that they are not producing for the capitalist profit, but for their own interests. Thus, flexible production, as the feudal mode of production, allows the new lords (the capitalists) to appropriate their surplus through extra economic means, that is, through the bonds of trust and co-operation that the workers build outside the shopfloor. Nevertheless, as 'in the hegemonic regimes, the workers produce through the need for survival' (ibid: 31). In terms of relations of production, it is precisely the mixture of the bonds of trust and patronage that link the hot workers with each other on the shopfloor and in the neighbourhood with the class relations that are shared by the cold workers – and the illusion of morality of the former and the illusion of class of the latter – that makes Morris a peculiar mixture of feudal and hegemonic regimes of production[233].

Unlike the straightforward historical trajectory of working class consciousness highlighted by Marx in the *Grundrisse* – from a non-alienated feudal world to an

[233] The same interdependence between 'class' and 'patronage' could be observed, according to Beynon and Austrin (1994) in the Durham mining industry until the 1920s.

alienated capitalism – working class consciousness mixes different moralities and experiences of 'labour' and 'capital' crafted in different times and spaces of production. Maybe, it is precisely this historical fragmentation between the 'proletariat' and the 'working classes' and between their subjective experiences of labour that allows capitalism to overcome its periodical contradictions.

Finally, looked at from the perspective of the business analysts, the widespread assumption of the historical 'failure' of British management to innovate the system of small-scale production into the modern system of mass production, seems today overstated. The latest emphasis of the business community on the new regime of flexible production and of the profitability of small, flexible and self-managed organisations, shows that Britain's economic backwardness in the past, constitutes its strategic advantage in the present. In fact, my evidence shows that the survival of ancient skills, machines and forms of subcontracted labour in Attercliffe, allows the reproduction of craftsmanship, task-orientation and team-work *within* the deskilled, mechanised and alienated labour process of industrial capitalism and to combine the 'economy of scope'[234] of the former and the 'economy of scale' of the latter. My case also shows that, in the British context, it is more efficient for the capitalists to allow self-management on the shopfloor, as in Morris, than to delegate the labour discipline to the management, as in the case of UNSOR.

[234] Economists call 'economy of scope' the reduction in the unitary costs deriving from the diversification of the production process. In other terms, at the level of the economic system, it is more efficient to have one firm, like Morris, producing twenty different products than twenty firms producing a single product. This term was opposed by Chandler (1990) to 'the economy of scale' of mass-producing factories.

BIBLIOGRAPHY

Adams, A. (ed). 1971. *The Sheffield Outrages. Report Presented to the Trade Unions Commissioners in 1867.* Sheffield: Adams and Dart.

Alexander, J and Alexander, P. 1991. 'What is a fair price? Price setting and trading partnerships in Javanese markets'. In *Man*, 26(3): 493-512.

Aristotle. 1962. *The Politics.* London: Penguin Books.

Ashton, D. 1955. *Men of Steel.* London: ISTC.

Baker, A. 1898. *The Management of Small Engineering Workshops.* Manchester: John Heywood.

Baldamus, W. 1961. *Efficiency and Effort.* London: Tavistock

Bellamy, P. 1997. *A history of workingmen's compensation 1898- 1950. From court to boardroom.* New York: Garland.

Berg, M. 1993. 'Small-Producer Capitalism in Eighteenth-Century England'. *Business History.* Vol. 35. Jan.

Berlastein, L. R. 1993. *Rethinking Labour history: essays on discourse and class analysis.* Urbana: University of Illinois Press.

Beynon, H. 1973. *Working for Ford.* Harmonsworth: Penguin Books.

Beynon, H. and Blackburn, R. M. 1972. *Perceptions of Work. Variations within a factory.* Cambridge: Cambridge University Press.

Beynon, H. and Austrin, T. 1994. *Master and Servants. Class and Patronage in the Making of a Labour Organisation.* London: Rivers Oram Press.

Biernacki, R.1995. *The Fabrication of Labour.* Berkeley: University of California Press.

Bijker, W and Law, J. (eds.) 2000. *Shaping Technology, Building Society'.* MIT Press.

Bloch, M. 1989. 'Symbols, song, dance and features of articulation'. In *Ritual, History and Power.* London: LSE monographs on Social Anthropology.

---------- 1998. 'What Goes Without Saying: The Conceptualization of Zafimaniry Society' In. M. Bloch, *How We Think They Think.* Oxford: Westview Press.

Blyton, P et al. 1993. *Changes in Work Organisation in the UK and German Steel industry: implications for Trade Unions and Industrial relations.* Report of the Anglo-German federation for the Study of Industrial Society.

Booth, G.1988. *Diamonds in Brown Papers: The Colourful Lives and Hard Times of Sheffield's Famous Buffer Lasses.* Sheffield.

Boughton, J. 1996. *Working Class Politics in Birmingham and Sheffield.* Unpublished PhD. thesis. University of Warwick

Bourdieu, P. 1972. *Outline of a Theory of Practice.* Cambridge: Cambridge University Press.

Bowman, H. 2001. *Talking to Families in Leeds and Sheffield.* CASEreport 19. London: London School of Economics.

Braverman, 1974. *Labor and Monopoly Capital.* New York: Monthly Review Press.

Bull, M. 1999. *Seeing Things Hidden.* London: Verso.

Burawoy, M. 1979. *Manufacturing Consent.* Chicago: University of Chicago Press.

---------- 1985. *The Politics of Production.* London: Verso

Burke, J. 1994. *Working Class cultures in Britain 1890- 1960.* London: Routledge.

Carr, J. and Taplin, W. 1962. *British Steel Industry.* Oxford: Basil Blackwell.

Cannadine, D. 1999. *The rise and fall of class in Britain.* New York: Columbia University Press.

Carrier, J. 1993. 'Emerging alienation in production: a Maussian history'. In *Man.* 27: 539-558

---------- 1995. *Gifts and Commodities. Exchange and Western Capitalism since 1700.* London: Routledge.

Carsten, J. 2000. *Cultures of Relatedness.* Cambridge: Cambridge University Press.

Chandavarkar, R. 1994. *The Origins of Industrial Capitalism in India.* Cambridge: Cambridge University Press.

Chandler, A. D. 1990. *Scale and Scope: The dynamics of Industrial Capitalism.* Cambridge: Harvard University Press.

Collier, L. Rosaldo, M. and Yanagisako S. 1992. 'Is there a family?' In B. Thorne, M. Yalom (eds.) *Rethinking the family.* Boston: Norheastern University Press.

Connole, N. 1961. *Leaven of Life.* London: Lawrence and Wishart.

Daugherty, J. and Keller, J. 1985. 'Taskonomy: a practical approach to knowledge structure'. In J. Dougherty (ed) *Directions in Cognitive Anthropology* Chicago: University of Chicago Press.

Dicks, C., Waddington, D. and Critcher, C. 1997. 'Redundant men and overburdened women. Local service providers and the construction of gender in ex-mining communities'. In J. Popay, J. Hearn and J.Edwards (eds.) *Men, Gender,*

Division and Welfare. London: Routledge.

Dudley, G. and J. Richardson. 1990. *Politics and Steel in Britain 1967 – 1988.* Worcester: Billings&Sons.

Dunn, J. 1976. The development of middle class estates in Sheffield. In S. Pollard and C. Holmes (eds.) *Essays in the Economic and Social History of South Yorkshire.* South Yorkshire County Council.

Eccles, R. 1981. 'The Quasi- Firm in the Construction Industry'. In *Journal of Economic Behaviour and Organisation.* 2: 335- 357

Edwards, P. K. 1986. *Conflict at Work. A Materialist Analysis of Workplace Relations.* Oxford: Basil Blackwell.

Edwards, J. 2000. *Born and Bred.* Oxford: Oxford University Press.

Edwards, J. and Strathern, M. 2000. 'Including Our Own', in J. Carsten (ed), *Cultures of Relatedness.* Cambridge: Cambridge University Press.

Elbourne, E. 1914. *Factory Administration and Accounts.* London: Green &Co.

Elias, N. 1994. *The Civilising Process.* Oxford: Blackwell.

Ferguson, J. 1999 *Expectations of Modernity.* Berkeley: University of California Press.

Firth, R. 1956. *Two Studies of Kinship in London.* London: Athlone Press.

---------- 1964. *Family and Kinship in industrial society.* Keele: University of Keele.

Firth, R; Hubert, J. and Forge, A. 1969. *Families and their relatives: kinship in a middle-class sector of London: an anthropological study.* London: Routledge& Kegan Paul.

Fortes, M. 1970. *Time and Social Structure and other Essays.* London: The Athlone Press.

Foucault, M. 1991. Governmentality. In *The Foucault Effect. Studies in Governmentality, with an interview with M. Foucault.* Burchell at al. (eds.) Chicago: Chicago University Press.

Fukuyama, F. 1995. *Trust.* London: Penguin.

Gaskell, M. 1976. Sheffield City Council and the Development of suburban Areas prior to World War I'. In S. Pollard and C. Holmes (eds.). *Essays in the Economic and Social History of South Yorkshire.* South Yorkshire County Council.

Gell, A. 1992. The technology of enchantment and the enchantment of technology. In J. Coote and A. Shelton (eds.) *Anthropology, art and aesthetic,* Oxford: Clarendon.

Gill, T. 2001. *Men of Uncertainty.* Albany: State University of New York Press.

---------2000. '*Yoseba* and *Ninpudashi*: changing patterns of employment on the fringes of the Japanese economy'. In J. S. Eades, T. Gill and H. Befu (eds.), *Globalisation and social change in contemporary Japan.* Melbourne: Trans Pacific Press.

Goldthorpe, J. et al., 1967. *The Affluent Worker in the Class Structure.* Cambridge: Cambridge University Press.

Goldthorpe, H. et al., 1968. *The Affluent Worker: industrial attitudes and behaviour* . Cambridge: Cambridge University Press.

Gray, R. 1987. The languages of factory reform in Britain, 1830- 1860. In *The Historical Meanings of Work.* P. Joyce (ed.) Cambridge: Cambridge University Press.

Gregory, M. 1985. *Angling and the Law.* London: Charles.

Gudeman, S. 1986. *Economics as Culture.* London: Routledge.

---------- 2001. *The Anthropology of Economy.* Oxford: Blackwell.

Hajnal. J, 1983. 'Two kinds of pre- industrial household formation system'. In R. Wall, J. Robin and P. Laslett (eds.), *'Family Forms in Historical Europe'.* Cambridge: Cambridge University Press.

Hakken, D. and Andrews, B.1993. *Computing Myths, Class realities. An Ethnography of Technology and Working People in Sheffield, England'.* Boulder: Westview.

Hall, J. C. 1865. *The Trades of Sheffield as Influencing the Life and Health of File Cutters and Grinders.* LSL. LP 70 (10).

Halperin, R. 1998. *Practicing Community.* Austin: University of Texas Press.

Harriss, J. 2002. *Depoliticizing Development: The World Bank and Social Capital.* London: Anthem.

Hart. G, 1992. 'Imagined Unities: Construction of the' household' in Economic theory'. In S. Ortiz and S. Lees (eds.) *Understanding Economic Process.* Lanham: University Press of America.

Hart, K.1973. 'Informal income opportunities and urban employment in Ghana'. In *Journal of Modern African Studies* 1, 61- 89.

--------- 1983. 'On Commoditization'. In *From Craft to Industry* (ed.) Esther Goody. Cambridge: Cambridge University Press.

-------- 1988. 'Kinship, Contract and Trust: The Economic Organisation of Migrants in an African City Slum'. In G. Gambetta (ed.), *Trust: Making and Breaking Co-operative Arrangements.*

Hey, D. 1998. *A History of Sheffield.* Lancaster: Carnegie Publishing.

Hegel, G. W. F. 1971. *The Philosophy of Mind.* Tr. A. Miller, Oxford: Oxford University Press.

Hirschman, A. O. 1970. *Exit, Voice and Loyalty* Cambridge: Harvard University Press.

---------- 1977. *The Passion and the Interest.* Princeton: Princeton University Press.

Hirst, P and Zeitlin, J. 1989. *Reversing Industrial Decline? Industrial Structure and Policy in Britain.* Oxford: Berg.

Hobsbawm, E.1968. *Industry and Empire.* London: Penguin Books.

Holland, G.C. 1841. *Unoccupied Houses.* LSL. LP. 75 (10)

---------- 1840. *The Grinders' Asthma.* LSL.

---------- 1860. *The Philosophy of Animated Nature.* LSL.

---------- 1865. *Enquiry into the Health of the Working Classes.* LSL. LP 10

Hutchins, E. 1988. *Cognition in the Wild.* Cambridge, MA: MIT Press.

Hyman, R. 1975. *Industrial Relations. A Marxist Introduction.* London; Macmillan.

---------- 1987. 'Strategy or Structure: Capital, Labour and Control'. In *Work, Employment and Society.* (1): 25-55.

Ingold, T. 1993. *Tools, Language and Cognition in Human Evolution.* Cambridge: Cambridge University Press.

---------- 2000. *The Perception of the Environment. Essays in livelihood, dwelling and skill.* London: Routledge.

--------- 2001. 'Beyond Art and Technology: The Anthropology of Skill'. In M. B. Shiffer (ed.) *Anthropological Perspectives in Technology.* Albuquerque: University of New Mexico Press.

Inkster, I. 1973. 'The Development of a scientific Community in Sheffield 1790 – 1850' In *Transactions of the Hunter Archaeological Society'.* X : 91 – 98.

Jarvis H. 1999. 'The tangled webs we weave: Households strategies to co-ordinate home and work'. In *Work, Employment and Society'.* 13 (2) 225-47

Keller, C. 2001. 'Thought and Production: Insights of the Practitioner'. In M. B. Shiffer (ed.) *Anthropological Perspectives in Technology'.* Albuquerque: University of New Mexico Press.

Keller, C. and Keller, J. 1996. *Cognition and Tool Use: The blacksmith at Work.* Cambridge: Cambridge University Press.

Kelly, K. 1995. 'Union Militancy and Social Partnership'. In P. Ackers, C. Smith and P. Smith (eds.) *British Trade Unions in the New Workplace.* London: Routledge.

Kessler-Harriss and Brodkin Sacks, 1987. 'The demise of domesticity in America' In *Women, Households and the Economy.* In L. Beneria and C. Stimpson (eds.) London: Rudgers University Press.

Lash, S. and Urry, J. 1987. *The End of Organised Capitalism.* Cambridge: Polity.

Laslett. P, 1977. The History of Ageing and the aged. In P. Laslett (ed), *Family Life and illicit love in early generations.* Cambridge: Cambridge University Press.

---------- 1983. 'Family and Household as work group and kin group': areas of traditional Europe compared'. In R. Wall, J. Robin and P. Laslett (eds.), *Family forms in Historic Europe.* Cambridge: Cambridge University Press.

---------- 1988. 'Family, Kinship and collective systems of support in pre-industrial Europe: a consideration of the 'nuclear-hardship hypothesis'. In *Continuity and Change. 3(2): 153- 175*

Latour, B. 1987. *Science in Action.* Cambridge: Harvard University Press.

Lave, J. 1988. *Cognition in Practice.* Cambridge: CUP.

Leach, E. R. 1964. Ritualisation in Man. *Philosophical Transactions of the Royal Society of London.* Series B, vol. 251: 403- 8

Leader. R, 1875. *Reminiscences of Old Sheffield.* Sheffield: Wes. &Co.

Leroi-Gourhain, A. 1993. *Gesture and Speech.* Cambridge: MIT Press.

Littler, C. R. 1982. *The Development of the Labour Process in Capitalist Societies.* London: Heinemann.

Lockwood, D. 1966. 'Sources of variation in working class images of society'. In *Sociological Review.* 14 (3) 249-267.

Lukacs, G. 1971. *History and Class Consciousness.* London: Merlin Press.

Lupton, R. 2001. *Places apart.* CASEreport 14. London: London School of Economics

Macfarlane, A. 1978. *The origin of British individualism.* Oxford: Basil Blackwell.

Mac Kenzie, D. and Wajcman, J. 1985. *The Social Shaping of Technology.* Philadelphia: Open University Press.

Macpherson, C. B. 1961. *The Theory of Possessive Individualism.* Oxford: Oxford University Press

McClelland, K. 1987. Time to work, time to live: some aspects of work and the re-formation of class in Britain, 1850- 1880. In *The Historical Meanings of Work.* P. Joyce (ed.) Cambridge: Cambridge University Press.

McEachern, D.1980. *A Class against Itself: Power in the Nationalisation of the British Steel Industry.* Cambridge: CUP.

McKinlay, A. and Taylor, P. 1998. 'Through the Looking Glass: Foucault and the Politics of Production'. In A. McKinley (ed) *Foucault, Management and Organisation Theory.* London : Sage.

Marx, K. 1963. *Economic and Philosophic Manuscripts of 1844.* Trans. T. B. Bottomore. New York: International Publishers.

---------- 1965 .*Pre-Capitalist Economic Formations.* Trans. J. Cohen and J. Hobsbawm. London: Lawrence and Wishart.

---------- 1973 [1857]. *Grundrisse.* Harmondsworth: Penguin Books.

---------- 1979 [1867]. *The Capital.Vol.(I).* Harmondsworth: Penguin Books.

Mauss, M. 1966 [1925]. *The Gift: forms and functions of exchange in archaic societies.* (trans.) I. Cunnison. London: Cohen & West.

---------- 1979. *Sociology and Psychology: essays.* London: Routledge.

Meiksins-Wood, E. 1991. *The Pristine Culture of Capitalism.* London: Verso.

Meszaros, I. 1970. *Marx's Theory of Alienation.* London: Merlin.

Meyer, J. and Rowan, B. 1977. 'Institutionalised Organisations: Formal Structure as Myth and Ceremony'. In *American Journal of Sociology.*2, 340 – 363.

Misa, T. 1995. *A Nation of Steel.* Baltimore: John Hopkins University Press.

---------- 2000. 'Controversy and Closure in Technological Change: Constructing 'Steel'. In W. Bijker and J. Law (eds.) *Shaping Technology, Building Society.* MIT Press.

Morgan, G. 1997. *Images of Organisation.* Thousand Oak: Sage.

Moore, B. 1970. *Sheffield Shop Stewards 1916- 1918.* Sheffield: Our History. Pamphlet 18.

Mumford, K. 2001. *Talking to Families in East London.* CASEreport 9. London: London School of Economics.

Nash, J. 1987. 'Corporate Hegemony and Industrial Restructuring in a New England Industrial City'. In D. Hakken and J. Lessinger (eds.), *Perspectives in U.S. Marxist Anthropology.* Bouldner: Westview.

Nucleous, M. 1996. *Administering Civil Society.* London: Macmillan.

---------- 2000. *The Fabrication of Social Order.* London: Pluto.

Odgen, S. 1994. *Attercliffe Village Trail.* Sheffield: Local Studies Library.

Ollman, B. 1971. *Alienation.* Cambridge: University of Cambridge Press.

Ouchi, W. 1980. 'Markets, Bureaucracies and Clans'. In *Administrative Science Quarterly.* 25: 129- 141.

---------- 1985. 'Organisational Culture'. In *Annual Review of Sociology.* (11): 457-483.

Ovid, 1955. *Metamorphoses.* London: Penguin.

Park, R. and Burgess, E. 1925. *The City.* Chicago: Chicago University Press.

Parry, J. P. 1986. 'The gift, the Indian gift and 'the Indian gift'. In *Man.* 21 (3): 453-473.

----------1999. Lords of Labour: Working and shirking in Bhilai. In *Contributions to Indian Sociology.* 33:1-2.

----------2001. 'Ankalu's' errant wife: sex, marriage and industry in contemporary Chhattisgarh'. In *Modern Asian Studies.*

Parry, J. and Bloch, M. (eds.), 1989. *Money and the Morality of Exchange.* Cambridge: Cambridge University Press.

Parry, J. P. et al. 1999. *The Worlds of Indian Industrial Labour.* New Delhi: Sage.

Parsons, T. 1969. *Politics and Social Structure.* New York: Free Press.

Pfaffenberger, B. 1987. 'Fetishised objects and Humanised Nature. Towards an Anthropology of Technology'. *Man* (n.s.) 23: 236 - 252

-------- 1992. 'Social Anthropology of Technology'. In *Annual Review of Anthropology.* 21: 491- 516.

--------- 2001. 'Symbols Do not create meanings- Activities Do: Or Why Symbolic Anthropology Needs the Anthropology of Technology'. In M. B. Shiffer (ed.) *Anthropological Perspectives in Technology.* Albuquerque: University of New Mexico Press.

Polanyi, K. 1944. *The Great Transformation.* New York: Rinehart.

Pollard, S. 1959. *History of Labour in Sheffield.* Liverpool.

---------- 1963. Factory Discipline in the Industrial revolution. In *Economic History Review* Vol. XVI, N2. pg 283

Pollert, A. 1991. *Farewell to Flexibility.* Oxford: Basil Blackwell.

-------- 1995. 'Team work on the Assembly Line. Contradiction and the Dynamic of Union Resilience'. In P. Ackers, C. Smith and P. Smith (eds.) *British Trade Unions in the New Workplace.* London: Routledge.

--------- 1998. 'The Flexible Firm: fixation or fact?' In *Work, Employment and Society.* 2: 281- 310.

Powell, W. 1990. 'Neither Market Nor Hierarchy: Network Forms of Organisations' In B. Staw (ed), *Research in Organisational Behaviour.* Vol.12. Greenwich.

Powell, W. and DiMaggio, P. 1991. *The New Institutionalism in Organisational Analysis.* Chicago: Chicago University Press.

Priore, M and Sabel, C. 1984. *The second Industrial Divide.* New York: Basic Books.

Pugh, A. 1951. *Men of Steel. By one of them.* London: Victoria House Printing Company

Putnam, R. 1993. *Making Democracy Work.* Princeton: Princeton University Press.

---------- 2000. *Bowling alone: the collapse and revival of American community.* New York: Simon & Schuster.

Putzel, J. 1997. 'Accounting for the dark side of social capital'. In *Journal of International Development.* Vol. 9(7): 939 - 949

Reid. C. 1976. Patterns of Middle Class Respectability in Sheffield. In S. Pollard and C. Holmes (eds.).*Essays in the Economic and Social History of South Yorkshire.* South Yorkshire County Council.

Roberts, R. 1971. *The Classic Slum.* Manchester: Manchester University Press.

Roethlisberger, F. and Dickson, W. 1939. *Management and the Workers.* New York: Wiley.

Rofel, L. 1999. *Other Modernities.* Berkeley: University of California Press.

Rose, M. 1988. *Industrial Behaviour. Research and control.* Harmondsworth: Penguin.

Rowntree, B. S. 1901. *Poverty: A Study of Town Life.* London: Macmillan

Sabel, C. and Zeitlin, J. 1985. Historical Alternatives to Mass Production. *Past and Present.* No 108: 146- 50.

Sahlins, M.1972. *Stone Age Economics* London: Tavistock.

Samuel, R. 1992. Mechanisation and Hand- Labour in Industrialising Britain. In L. Berlanstein, L (ed.) *The Industrial Revolution and Work in nineteenth-century Europe.* London: Routledge.

Schein, E. 1985. *Organisational Culture and Leadership.* San Francisco: Jossey-Brass.

Schneider, D. and D, Murray. 1980. *American Kinship: a cultural account.* Chicago: University of Chicago Press.

Shaw, W. 1979. 'The handmill gives you the feudal lord': Marx's technological determinism. *History and Theory.* Vol. 18: 155- 76.

Smith, C. 1991. 'From 1960's Automation to Flexible Specialisation: a *déjà vu* of Technological Panaceas'. In A. Pollert (ed) ' *Farewell to Flexibility'*. Oxford: Basil Blackwell.

Smith, J. 1984. 'The Paradox of Women's Poverty: Wage Earning Women and Economic transformation'. In *Signs* vol. 10: 291- 310

Stacey, J. 1990. *Brave new families.* New York: Basic Books Chicago: Chicago University Press.

Stack, C. 1974. *All Our Kin.* New York: Harper and Row

Stafford, C. 2000. 'Chinese Patrilinity and the cycles of *yand* and *laiwang.*'. In J. Carsten (ed) *Cultures of Relatedness.* Cambridge: Cambridge University Press.

Steinfeld, R. 1991. *The Invention of Free Labour.* Chapel Hill and London: The University of North Carolina Press.

Stephenson, C. 1995. 'Trade Unionism in two Japanese Transplant'. In P. Ackers, C. Smith and P. Smith (eds.) *British Trade Unions in the New Workplace.* London: Routledge.

Stewart, M. 1993. 'Gypsies at the Horse- Fair'. In *Contesting Markets.* Ed. Roy Dilley. Edimburgh: Edinburgh University Press

Storey, J. 1985. 'The means of management control'. In *Sociology.* 19 (2), 192 – 211.

Strathern, M. 1992. *After Nature.* Cambridge: Cambridge University Press.

Stronach, I. 1990. 'The Ritual of recovery: UK education and economic revival in 70s and 80's' In *Anthropology Today.* Vol. 6 (6), pg. 4 - 12.

Thompson, E. P. 1963. *The Making of the English Working Class.* Penguin Books.

---------- 1967. 'Time, work-discipline and industrial Capitalism', *Past and Present,* 38: 56 -97.

Townsend, P. 1979. *Poverty in the United Kingdom: a survey of household resources and standards of living.* Berkeley: University of California Press.

Tweedale, G. 1987 *Sheffield Steel and America: A Century of Commercial and Technological interdependence, 1830 – 1930.* Cambridge: CUP.

---------- 1995. *Steel City.* Oxford: Oxford University Press

Ure, A. 1835. *Philosophy of Manufactures.* Sheffield: Local Studies Library.

Veblen, T. 1914. *The Instinct of Workmanship, and the State of the Industrial Arts.* New York: Macmillan

----------1953 [1899]. *The Theory of the Leisure Class.* New York: Mentor Books.

Walker, A. 1999. Sheffield's Eastenders. Family and Community in Attercliffe 1841-1891. In *The Local Historian. 29 (4).*

Westegaard, J, Noble, I. And Walker, A. 1989. *After Redundancy.* London: Routledge

Westwood, S. 1984. *All Day, Every Day.* London: Pluto Press

Williamson, O. 1975. *Markets and Hierarchies.* New York: Free Press.

Willmott, H. 1990. 'Subjectivity and the Dialectics of Praxis: Opening Up the Core of Labour Process Analysis'. In D. Knights and H. Willmott (eds.). *Labour Process Theory.* London: Basingstoke.

Wilson, P. and Pahl, R. 1988. 'The Changing Sociological Construct of the family'. In *Sociological Review.* 36:233 – 266

Wilson, W. J. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy.* Chicago: University of Chicago Press.

Wirth, L. 1956. *The Ghetto.* Chicago: Chicago University Press.

Wood, C. 1838. *Lecture on the position and grouping of the phrenology in the Human Head.* LP 4 (13). LSL.

Young, M. 1954. 'Kinship and Family in East London'. In *Man.* N. 210

Young, M. and Willmott, M. 1971. *Family and Kinship in East London.* Harmondsworth: Penguin

Young, M. and Willmott, P. 1975. *The Symmetrical Family.* Harmondsworth: Penguin.

Zucker, L. 1987. 'Institutional Theories of Organisation'. In *Annual Review of Sociology.* 13, 443-464.

APPENDIX ONE

GENERAL PROFILE OF THE MORRIS WORKERS

AGE

The average age in the hot department is 59, and 41 in the cold department. In spite of the fact that the tasks in the hot department are physically more wearing than the tasks in the cold department, workers generally move from the latter into the former as they get older.

RESIDENCE

In the hot department 1/3 of the workers live in Attercliffe, 1/3 in Stannington and 1/3 in Hackenthorpe. In the cold department 38% are resident outside Sheffield and the other 62% live in residential areas on the periphery of Sheffield. Half of the hot workers lived in Attercliffe during their childhood, whereas 30% of the cold workers come from mining villages and the rest from residential areas scattered along the heavy industrial corridor between Sheffield and Rotherham. None of their families comes from Attercliffe. Attercliffe and Stannigton are two areas historically linked to the cutlery and tool industry and where these two industries still survive.

OCCUPATIONAL BACKGROUND

With the exception of Tony's father, all the hot workers come from families of at least two generations of steelworkers. The majority of them were skilled workers. Only 35% of the cold workers' parents were employed in the steel industry and they were all unskilled labourers (crane drivers, joiners, helpers). The majority of the other 65% consisted of miners, lorry drivers and car mechanics.

FAMILY

Except for big Dave, all the hot workers are married and none of their wives work. The average number of persons per household is 5, and there are not less than 2 unemployed members in each household. 90% of the wives of the cold department work and the majority of them receive a higher income than their husbands. Only in one household are there more than 3 members, and this is the only household where unemployment is present.

OCCUPATIONAL ILLNESSES

30% of the workers of the hot department have suffered lung cancer, and 30% from heart diseases. All of them suffer from chronic back pain and deafness. In the cold department, 20% of the workers have had some disease connected to the central or peripheral nervous system ('white finger', positional vertigo, chronic headache) and half of the workers suffer, or have suffered, from blood pressure related-diseases.

EDUCATION

Half of the hot workers received formal apprenticeship and the other half left school without GCES. In the cold department only one worker received formal education, whereas the rest are equally split between people with GCES and those without. On a closer look, educational patterns can be related to generational structure. In fact, formal education is high both in the younger (below thirty years of age) and in the older generation (above fifty years of age), whereas the vast sample of workers between 50 and 60 years of age retired from school before 14.